

Central of Georgia Railway:
Savannah Repair Shops & Terminal Facilities
Site Bounded by West Broad, Jones,
West Boundary and Hull Streets
Savannah
Chatham County
Georgia

HAER No. GA-1

HAER,
GA,
26-SAV,
55-

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Historic American Engineering Record
National Park Service
US Department of the Interior
Washington, DC 20240

HISTORIC AMERICAN ENGINEERING RECORD

HAER,
GA,
26-SAV,
55-

CENTRAL OF GEORGIA RAILWAY:
SAVANNAH REPAIR SHOPS & TERMINAL FACILITIES
HAER No. GA-1

Location: Site bounded by West Broad, Jones, West Boundary and Hull Streets, Savannah, Chatham County, Georgia.

USGS 7.5 Minute Series, Savannah, GA-SC
UTM Coordinates: 17.490380.3548560.

Dates of Construction: 1853-1926

Engineer/Architect: William M. Wadley, Superintendent and later president of the railroad, engineer.
Augustus Schwaab and Martin P. Mueller, architects.

Present Owners: City of Savannah Norfolk-Southern Corporation
City Hall 125 Spring Street, SW
Savannah, GA 31401 Atlanta, GA 30303

Present Use: The city uses several secured buildings for storage. Others have been stabilized to arrest further deterioration until proposed redevelopment and adaptive reuse plans are finalized, financed and construction can begin.

Significance: The Central of Georgia Railway: Savannah Repair Shops are significant because they represent the major site component of one of the earliest attempts in the United States to plan and develop a wholly comprehensive and integrated railroad repair, administration, passenger and freight facility at a single site.

The shops were designated a National Historic Landmark on June 2, 1978. The Passenger-Station and Train Shed, which is part of the total site, was designated a National Historic Landmark separately on December 8, 1976, because of the special significance of the train shed. It is the oldest of the eleven known surviving long-span, trussed roof, train sheds in the United States.

Historians: During the Summer of 1975, Beth Lattimore was project historian charged with researching the architectural aspects of the railroad structures. John Bartley Schmitt was project historian charged with researching the technological aspects of the repair shops. One year before the recording project (Summer 1974),

Donald Andrew Grinde, Jr. did preliminary research on the Central of Georgia Railway so as to lay the groundwork for the recording project. The work of all three historians is included in this package.

Note:

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Introduction

From Macon I went to Milledgeville, twenty-five miles to the Northeast, the Capital of Georgia. Instead of taking the direct road, we made a detour, going the first thirty miles on the Savannah Railway, to a station called Gordon, where we found a stage-coach ready to drag us through the deep sands of the pine-barrens, or to jolt us over corduroy roads in the swamps. As we were traversing one of the latter, at the rate of half a mile an hour, I began to contrast the speed of the new railway with stage-traveling. Our driver maintained that he could go as fast as the cars. "How do you make that out?" said I. "Put a locomotive," he replied, "on this swamp, and see which will get on best. The most you can say is, that each kind of vehicle runs fastest on its own line of road." [1]

Georgia in the 1840's was a rural, agricultural, and relatively undeveloped state, indisputably conservative in nature as evidenced by this dialogue on the virtues of the Central of Georgia Railroad. Slow at first to adjust to the transfer from stage and river to rail travel, and then bursting ahead with dauntless energy when threatened with the loss of commercial supremacy in the cotton trade, Georgians just fifteen years after the chartering of the Central, were preparing for a major physical expansion of the road in 1852.

The 1852 Central Railroad and Banking Company Depot at Savannah, a part of this expansion scheme, is possibly one of the oldest surviving complexes of its kind in this country. The plan as conceived integrated freight, passenger, and motive power divisions on contiguous sites, with the major part of construction completed between the years 1850-1856. When compared with a contemporary plan of the site, it stands little changed 123 years later.

These surviving structures of the 1850's therefore, are valuable to the student of civil and industrial architecture since they represent early essays in the development of a building form to meet the needs of a new mode of transportation. That these structures are essentially conservative in their construction will be discussed later. Advanced stages of deterioration (in August, 1975, within a ten day period of heavy rains, at least 1/3 of the remaining portion of the Machine Shop collapsed), and alternative development projects for the site threaten to remove the buildings from the site altogether. It is hoped that this report, in placing these structures within the context of Savannah's architectural development, will help to prevent the physical destruction of the site.

The building of the Road into the interior of Georgia tapped the sources of upland cotton freight, and the revival of the cotton trade precipitated an unprecedented building boom in Savannah in the 1850's. Day and night one could hear the rumble of the wheels of the drays transporting the cotton over the plank road that connected the Railroad Depot with the River. All along Bay Street, the principal thoroughfare for the transfer of cotton, artisans were

busy constructing the commercial buildings for the cotton trade--Factor's Ranges they are called. Stoddard's upper and lower ranges, dating from 1859 reflect a common building type of that period; a tripartite form with gabled center portion, arched windows, and dentils or brackets near the line of the parapet.

Other civic structures being built during this period used this form, the Abrahams Home, 1858 and Massie School.

The Greek Revival had held a firm grip on Savannah from the 1830's to the 1850's, but it was the Gothic style that Charles Greene preferred to use in constructing his mansion in 1853. John Norris, the architect for Greene's house, had also built the Chatham Artillery Armory and the Georgia Historical Society in the Gothic style in 1847. But this Gothic style was merely a pretension, an envelope of cusps and crockets around a plan that was essentially symmetrical and classical in origin.

The dominant non-civic architectural mode then, in mid-Century Savannah, was the builder-designed townhouse, usually 30' wide, but sometimes constructed as a double tenement or in rows of several units. High-stooped, of Savannah Gray Brick, severely simple in design, these houses relied on the warm color of the brownstone trim, and pinkish cast of the bricks and the row of brick dentils along the cornice line for relief in an otherwise unornamented facade.

Other civil architecture of the period of the building of the Central Depot included the Mutual Gas Light Company buildings on the site of the Trustees Garden. The Gas Works were begun in 1850 and the small Exhauster-Engine Building and neighboring office building are consistent with Savannah's mid-century industrial construction.

The Savannah, Albany and Gulf Railroad was organized in Savannah in 1852 to build a road to Albany and the Chattahoochee River in the direction of Mobile. The depot was located on property at Liberty and East Broad Streets, and construction began in earnest about 1854. Workshops which produced passenger cars, a round-house, up and down freight warehouses, and a passenger station were among the buildings constructed. Unfortunately, none of the early buildings are extant today. The 1891 Koch view of Savannah shows a plant smaller than that of the Central and indicates these structures are well worth further study for a comparative analysis with the Central's depot.

Between 1831 and 1845 work progressed on Fort Pulaski, a coastal fortification at the mouth of the Savannah River. William Wadley, later to become Superintendent of the Central during the building of the Savannah Depot, came to the city in 1834 and met a labor recruiting agent from Fort Pulaski, who employed him to work at Cockspur as a Blacksmith. Wadley was promoted to the position of "Superintendent of Public Works

on Cockspur Island" and was provided with a house which he shared with Mr. Flodder, a master brick-layer. When he arrived at Cockspur, Wadley had only the rudiments of ordinary school knowledge, but during these six years he devoted much time to study and taught himself civil engineering. [2]

It is possible, therefore, that when William Wadley conceived the master plan for the Railroad Depot at Savannah, his recent experiences at Fort Pulaski may have caused him to influence the design of the builders. More probably though, the architects were influenced by the prevailing brick styles of the 1850's in Savannah. The Italianate form of the Passenger House, with its central gable and the rhythmic division of the facade into thirds, is related to the ranges on the Riverfront and the Abrahams Home. That the designers chose the Romanesque and Gothic styles for other buildings is not unusual when considered as romantic, exotic structures for the hissing steam powered locomotives that were replacing the uncomfortable and slow coaches Lyell described a decade before.

The conservatism of Savannah's business population is evident in that there were no great innovative features in these early industrial buildings. Builders built what they knew best and what they knew would sell, hence the Savannah Gray brick townhouse endured throughout the century with few modifications. The same would be true for the Industrial buildings.

Passenger Station and Train Shed

Though a new passenger station [3] and additions to the shop depot [4] had been erected by the Central of Georgia Railroad at Savannah during the years 1845-1846, increasing business of the Road led the Company to design a master plan to accommodate their expanding needs. Large amounts of real estate were purchased in 1850 [5] and the new depot was commenced in the early part of 1851. [6]

R. R. Cuyler, the President of the Central Railroad advocated in 1852 that "The Central Railroad should, as early as practicable, be placed among the first class Railroads of the Union. Besides full preparation for freighting business, (our great source of revenue,) we should not fail to attract passengers by furnishing proper accommodations for them throughout the line." [7]

Up until this time the passenger station, a 50' x 200' structure was approached by tracks on the South side of Railroad Street (now Louisville Road). No description has been found of the appearance of this structure, but it was clearly neither convenient nor large enough to accommodate the rapidly increasing passenger business of the Road.

The 1855 Annual Report states that "Nothing yet has been done towards the erection of a suitable passenger house at the end of the Road; it is daily becoming more necessary; and I would respectfully suggest the propriety of making a commencement as early as practicable." [8]

The new passenger house apparently was low in priority in the minds of the Board because although the Superintendent advised its construction year after year, nothing was done about it. The 1856, 1857, and 1858 Annual Reports all indicate the need for the Passenger House.

Some further purchases of land have been made, for a site on which to build a new passenger house at this end of the Road, but nothing has been done towards the erection of a building. [9]

The offices in West Broad Street in this City may be said to be finished, but no movement has been made towards erecting the New Passenger House which has for some time been contemplated. [10]

. . . should you determine, as I think you should . . . to build the new Passenger House, at Savannah, so long contemplated, this year . . . [11]

The plan for the Passenger House was that it be built in the "same style with the freight house" with a "front main building of 90' by 124', three stories in height, and in the rear of this the Train House, 600' long." [12]

Finally, in February of 1860, the construction of the Passenger House was underway. The shed portion was to be completed by February of 1861, but the front building would not be finished until autumn of that year. [13] Minutes for the Central name the architect of the new Passenger House as Mr. A. Schwaab, engineer. [14]

The shed portion, with the exception of the iron gates was completed by October of 1861, but the Road's income decreased, and the work on the Head House advanced slowly. [15]

Civil War brought the work on the Passenger House to a halt in 1862, and it was closed up until the necessary materials could be procured. [16] As war conditions worsened and the situation in Savannah grew more grave, no report could be made in the year 1864. However, little damage was inflicted on the site at Savannah as a result of the War and business was resumed in 1866, although no reference is made in the Annual Reports about the actual completion of the Passenger House.

Tax Assessment Books for 1871, 1873, 1876, 1878, 1884, and 1888 list an "unfinished building on West Broad Street." This undoubtedly refers to the unfinished Passenger Station which had remained since its erection "an unsightly and useless structure." For \$4,000, the station was remodeled and thoroughly fitted up. [17] A typed note in the files of the Central states that in 1942 Mr. J. W. Adams said that "in 1874 it was found that the wood had rotted and it had to be taken out, when the building was redesigned to some extent. It was completed in 1876." [18] Possibly the building had sustained some deterioration in all the years of non-use.

The station was at last opened in 1876.

A thorough inspection of the reception department of the Central Railroad, which has been opened within the past few days, satisfies us that in this respect of public convenience and comfort, Savannah can bear away the palm from her Southern sister cities.

In all its apartments this department shows that judgement and correct understanding of the wants of the traveling public have been used. The company deserve credit for their enterprise in these times in completing what has for long been needed at their depot.

The reception rooms, baggage department, and ticket office, are now located in the building corner of West Broad and Railroad Streets.

As we have stated, all business is now conducted from West Broad Street, which change is a very desirable one, and renders it possible to conduct matters on a larger scale. [19]

It is evident that until the completion of the Passenger Station there had been no passenger accommodations whatever.

The extra length of passenger trains in 1901 necessitated the extension of the train shed by means of an umbrella shed. Further changes were made in 1932 when the ticket office in the Passenger Station was rearranged to provide for the consolidation of the city and depot ticket offices.

The Head House which so long served as a reception center for visitors to Savannah has recently undergone a renovation to fit it out as a visitor's center for tourists wanting to visit the Historic District. What follows is a contemporary description of the interior as it was when opened in 1876. This is juxtaposed for comparative purposes with a recent interview with the architects for the renovation.

The lower or street floor has been divided into three apartments - on the South is the reception room for ladies and gentlemen, which is very handsomely furnished, matted, well ventilated, and lighted. Immediately in the rear is the ladies' private room, which is likewise well-furnished, supplied with wash basins, water closets and all the accessories for the comfort of travelers.

At the back of the passageway, between a general reception-room and the baggage department, is a neatly fitted up room for gentlemen, with all the modern conveniences.

The luggage-room is a commodious apartment, and in this room is now checked and delivered all baggage, the entrance being upon West Broad Street. The baggage is transferred from this room on trucks, a gangway being built to the walk in the depot building. By this means travelers are greatly inconvenienced and business facilitated . . . Behind the baggage room, and separated by a passage connecting with passages or aisles on either side is the ticket office, located most conveniently to the reception room. It will be seen that the traveler can accomplish the purchase of his ticket and checking of his baggage within the space of a few yards.

On the northern side of the baggage department are fitted up reception rooms for the colored people, provided with all the conveniences as those of the Whites, a room also being set off for the women with washstands, looking glass, closets, etc. These rooms are very neatly and comfortably furnished, and, like the other rooms in the building, are lighted with gas.

The finish of these several rooms particularly attracted our attention, the graining and painting being of the best style. In fact there is nothing tawdry about the place. Everything is done in first class style, and the building now is a credit to the company and the city. On the southern side, and opening out into the depot yard, immediately below the reception room, is a neatly fitted up apartment designed to be used as a restaurant. In the rear of it is the kitchen, provided with all the necessary accessories. We hear it stated that a young man well-known in Savannah will assume the proprietorship of the place at the commencement of the season, and will conduct it in the best style, in which event, we are assured, he will meet with great success. The traveling public are not slow to appreciate comforts and conveniences, and we doubt not that the Central Railroad will gain many friends from these improvements. [20]

In 1975 the Passenger House again opened its doors to travelers to Savannah as a Visitors Center and headquarters for the Savannah Chamber of Commerce. The work done to the building does not represent a restoration in the museum sense, but a renovation to insure the on-going use of this most important railroad structure.

Robert D. Gunn and Eric Meyerhoff, architects for the renovation, took careful care that no changes were made to the basic original configuration of the rooms, and in many instances actually repaired and replaced such features as damaged plaster cornices. Office intensity lighting was installed unobtrusively, flush with the ceiling and utilitarian rooms. Rest rooms and closets were worked into "found" spaces. [21]

"Gray Building" 227 West Broad Street

The first permanent office building for the Central Railroad and Banking Company was finished in 1856 on West Broad Street at the head of the Up Freight Warehouse. The 1855 Annual Report for the Central states that:

Our depot buildings, which have been commenced at this place are now nearly completed. The only one now unfinished is that for the offices in West Broad Street, and this we hope to have done by the first of May. To complete this building will cost not far from \$5,000. It will be a commodious and moderately elegant structure, but not more so than the business and importance of the Railroad demands. [22]

In 1856 the General Superintendent reported:

Our offices on West Broad Street have been finished except covering the columns and entablature with mastic, for which a contract has been made, and the work will be commenced in a few days. [23]

By 1857 Emerson Foote, the General Superintendent, reported that "the offices in West Broad Street in this City may be said to be finished." [24]

The reporter for Colburn's New York Railroad Advocate, writing of the Up Freight Warehouse, mentions that "at the head of this building, fronting on West Broad Street, are the transportation and general offices of the Company. This front is large and handsomely finished on the Roman Doric style of Architecture." [25]

A more complete description of the building given in 1859:

The front building is of three stories, 124' in depth, and contains numerous spacious offices, in which the business records of the Road are classified and arranged with all the method and exactitude of Departmental accounts in Washington. The spacious halls which divide these offices are a marvel of solidity and beauty, and the walls (a new and fine idea for this character of building) were in rough plaster, a brownstone square alternating with the natural color of the mortar and producing a very pleasing effect. [26]

Exactly what the author is referring to in his last remark is not exactly known. The Gray Building has undergone numerous renovations including repainting and plastering both interior and exterior. It is possible the exterior finish was of a slightly different appearance than the overall Gray of today.

There is no mention of an architect for the design of the Building, though tradition credits Schwaab as the architect. No early plans were found for the structure, however, there are many for the subsequent office alterations. The basic onfiguration of the building has not been changed.

Up Freight Warehouse

One of the first structures to be completed as part of the 1852 plan for the new Central Depot was the Northern or "Up Freight" Warehouse. The Superintendent's office reported in 1852 that the "piers and abutments of the brick viaduct of four spans across the canal and West Boundary Street have been erected, and the foundations of a temporary trestle bridge to support the track to the Northern Freight House, are now being prepared." [27] The warehouse was completed in 1853. [28]

Colburn's New York Railroad Advocate reports that the Up Freight House was "built of brick in the most substantial manner, and 800' x 63' in size. On New Street this building is entered by a long range of wide doors, while on the inner side, next to the yard, are the doors through which the freight passes to go on the cars. It must be remembered that the cars do not stand in this building, but outside; the whole width of the floor, of say 60', being for storage of freight. There is never any snow in winter, at this station; a fact which accounts for the tracks not being covered in." [29]

In 1859 the Daily Morning News described the Up Freight Warehouse in this manner:

This structure is of brick, covered with mastic* in brownstone hue . . . the view through the long freight house of 800' depth, is exceedingly imposing; and here, ranged under appropriate labels attached to the walls, was Up Freight for almost every section of the South, from Savannah should receive goods for New Orleans, but such is the case, with many goods in the dry goods line, where quick transportation is important." [30]

The Up freight house today is divided by fire walls into a series of bays with four timber trusses to a bay. Only a few of the bays contain the original wood floors, most having been replaced with concrete.

The two bays immediately adjacent to the Gray Building have been modified in recent years with the ornamental brickwork removed and a heavy stucco applied uniformly over the exterior of these bays.

The parapet is capped with stone and is very similar to that on the lumber shed.

The condition of the fabric of the building appears to be good and it is still in use as a warehouse for various concerns.

Cotton Yard Gates

As early as 1854 brick walls were conceived to surround the depot yard, however, the pressure to complete the main buildings of the depot placed the walls low in priority.

In 1856 a wall and gateway were completed "except for the stone cap and iron railing", but "beyond this, nothing has been done towards enclosing the depot grounds with a brick wall." [31]

No further mention is made about when the depot was actually enclosed, however a small length of wall still exists directly behind the Up freight House fronting on Hull Street (New Street) which is probably a fragment of the original wall.

The Cotton Yard Gates are Romanesque in style with crenelated towers that house the gatekeepers "who kept a check on all traffic passing in and out of the cotton yard." [32] The style of these gates is quite similar to that of the Engine/Boiler room in the Shop complex.

* Mastic: A pastelike cement, especially one made with powdered lime or brick and tar.

"Red Building" 233 West Broad Street

To permit a more economical working of the official and clerical staff, an additional general office building was constructed at Savannah in 1887. [33]

Under the present arrangements the President and his assistants are up town removed from the general and local offices which themselves are all mixed up and cramped for room. When the new office is completed all of the offices will be brought closer together and will be arranged on a more convenient system. [34]

The building was constructed just East of the Down Freight House. Fay and Eichberg, the architects, designed a Queen Ann structure, the first story being of granite ashlar, and the second and third of a deep red pressed brick. [35] The building is ornamented with terra cotta decoration of the period and several of the windows have colored glass panels known in catalogues, such as the Yellow Pine List, as Queen Ann windows.

The Red Building is now vacant.

Down Freight Warehouse also Known as Produce Freight Warehouse

In 1859 it was evident that the Up Freight Warehouse was not adequate to handle the increased freight of the Railroad. Reporters noted in 1859 that "as large as is this freight house [Up Freight House,] it is quite insufficient for the proper storage, classification, and delivery of the goods, and another of the same length is shortly to be erected, ranging parallel with it at a short distance, so as to admit intermediate tracks." [36]

The December Annual Report of 1859 states that "the new Produce Freight House, 600' x 36' (50' of it being two stories high, for storing provisions, tools, etc for repairs of the road) is nearly completed." [37] And in 1860 "the new Savannah Down Freight House has been completed and in use for ten months past." [38]

The Down Freight House was extensively repaired in 1878 [39] and was extended in 1898. [40] It is currently used by various concerns.

Motive Power Division

"When it is remembered that all the buildings described are new, and of fine architecture and arrangement, - well lighted, well ventilated, and every wall well arranged, - the roofs of iron, - and when it is considered that they

have not been put up piecemeal, but that they form a complete symmetrical whole, - we doubt candidly, if any other station can be found in this country which can equal this."

Daily Morning News, 17 July 1855
(from Colburn's New York Railroad Advocate)

Machine Shop

"One of the finest repair shop rooms in the United States." [41]

"I could get more accomplished in these old shops than where we are now." [42]

In 1852 the walls of the Engine House and its adjacent buildings, presumably the Machine Shop, were erected and waiting the arrival of an iron roof from the firm of A. Whitney and Son of Philadelphia. The corrugated iron roof had to be imported from Europe causing a delay in the completion of the work. [43]

Though the machine shop appears on the 1853 Vincent Map of Savannah it was not completed and in operation until late 1855 when they moved in the last of the machinery. [44]

Contemporary reporters describe the 1855 structure as well-lighted by large windows on three sides and by means of a lantern in the iron roof. They describe the work benches as the "best we have seen, having a solid hard pine top of 6 inches thickness for their whole width being closed up in front with a sloping wood work sheathing, like a grocery counter. This prevents the collection of old scrap, dirt, and rubbish under the benches." [45]

The windows by which the machine shop was lighted were double hung, 12 over 12 lights, with stone lintels and sills, probably made of granite. The fourth wall of the machine shop corresponded to the outside wall of a former Engine House.

The scarcity of supplies during the Civil War probably accounted for the deteriorated and leaking condition of the roof in 1866. [46] However it was not until ten years later in connection with the addition of a second story that this condition was remedied. This second story gave additional room for work, and the storing of patterns and top grade lumber. This addition was not completed until early 1878 and it drew the attention of the Savannah Morning News in June, 1877.

The machine shop, or roundhouse, as it is generally called, of the Central Railroad Company, is undergoing considerable improvement in the addition of an upper story and the construction of a fine ventilated roof. The old iron roof which covered the building many years rendered it very hot, and we understand that during the summer season the workmen have suffered greatly from the heat. The improvements now approaching completion will render this building one of the most pleasant and comfortable working places to be found in the South. The upper room will be used for pattern work and other light mechanical labor. The lower room will be used for the same purpose as now. There has been no interruption to the work in this department during the progress of these improvements. The cost we understand is in the neighborhood of \$15,000, which, considering the vast improvement and advantages in comfort to the men and facilities in working, is money well-invested. The work has been mainly done by two of the Railroad men under the direction of Mr. D. D. Arden, the master machinist. [47]

Summary Description

The Machine Shop is 162 feet 7 1/2 inches long by 61 feet 10 inches wide. It is 51 feet high to the top of the gable, or 59 feet 7 inches to the top of the monitor. Though there is no documentary evidence that Muller or Schwaab were the designers of this building, its style bears a relationship to their 1872 City Market (demolished 1954).

The appearance of the machine shop in 1855 was probably not unlike that of the blacksmith shop. The 1871 view of Savannah shows no lantern in the machine shop roof, though one is described in the 1855 article, nor does it show the machine shop directly intersecting the roundhouse, though this was the scheme of the original plan. This is assumed to be an error on the part of the artist as this arrangement appears on no other plan.

Fourteen timber trusses, 12 feet 3 inches on center, support the 1878 roof. The second floor is hung from these trusses by means of metal rods, 1 1/4 inches in diameter, 11-12 inches on center, leaving an unencumbered workspace below. This second floor was reached by means of a wooden stair, later augmented by the introduction of an elevator.

The walls of the machine shop are made of brick, 18 inches thick, with a header course every five courses. The most recent roof covering was wood with a metal covering made by Conklin's Dixie (30 pounds coating Keystone).

At the time of this writing, the machine shop has almost totally collapsed with only three of the trusses remaining. These are expected to fall at any time. Large sections of the bearing walls have been pulled away down to the level of the second floor.

Blacksmith Shop

The one story blacksmith shop forms an "L" to the machine shop on its western side. Completed ca. 1855 with the machine shop, it follows the same general form of masonry and timber construction, gable roof with monitor, of the Machine Shop. New roofs were added in 1875 and again in 1882 after storm damage, but basically the building remains unchanged.

According to the 1852 plan, 50 feet of the blacksmith shop formed a separate room, which division is no longer there except that the floor material changes today at approximately that point. This separation, however, does not appear on the 1853 Vincent Map.

The construction of the blacksmith shop is generally the same as the machine shop, with timber trusses set 13 feet 2 3/4 inches on center, and monitor. The monitor is in deteriorated condition and has almost collapsed.

Tender Frame Building

Forming an "L" on the Eastern side of the Machine Shop, in line with the blacksmith shop is the original tender frame shop, store room, and office. This was completed ca. 1855 at the same time as the Machine shop and blacksmith shop. In 1899 a second story was added to this building and used as a laboratory. [48] The Tender Frame room later became the tool house and airbrake construction room. This building was not harmed in the collapse of the Machine Shop.

Engine / Boiler Room / Pattern Room

Although this building appears on the 1852 Plan it does not appear on the 1853 Vincent Map, suggesting that this structure was not completed until 1854. A Romanesque Revival structure, with crenelated parapet and arcaded corbel table, it matches in style the 1853 Bridge across the Ogeechee Canal and rivals the Lumber Shed and Stack in ornamentation.

Contemporary reports describe the Engine Room as "unusually fine; it is very high and well-lighted; the finish of the walls being hard and smooth, and the general appearance being much superior to that of such rooms in other machine shops." [49]

The 1852 plan shows two separate rooms for Engine and Boiler. The size of the Engine Room was approximately 40 feet x 20 feet and the Boiler Room approximately 40 feet x 13 feet. [50] Although the separate names stenciled on the North facade of the building suggest two rooms, the partition has been removed with only steel "I" beams separating a single space.

The room that runs the entire width of the building on the South side was originally used as a pattern room, and was approximately 35 feet x 20 feet. This room was most recently used as the Power House office.

A wood frame shed was attached to the North West Corner of the building some time after 1907 to store the wood shavings which were blown to it from the Planing Mill. The shavings were passed through a small iron door in the West Wall of the Boiler Room where they were burned. The shed directly behind this shed housed a pump which recirculated water to the boiler.

The overall dimensions of the three rooms is 60 feet 7 inches long x 35 feet 4 inches wide x 27 feet 2 inches high. The pattern room is situated over a 6 foot basement. The windows on the east elevation of the Engine Room are arched, double hung 20/24 lights with wood frames and mullions. The windows of the powerhouse were originally glazed 6/6, but some have been replaced with 6/4 and 4/4. They are double hung with stone lintels and sills as in the Blacksmith Shop.

The North elevation of the Engine/Boiler Room has been destroyed.

Lumber Storage Shed

This one story, masonry and timber building was built after the Carpentry Shop had been completed since there is a finished corner of the Carpentry Shop within the West Wall of the Lumber Storage Shed. The date of construction for this building is probably ca. 1855 and it is included in Colburn's article. For a shed, the brick work is quite ornamental, though not quite as elaborate as that of the Engine/Boiler House. The detailing along the cornice line is similar to that on the Up Freight Warehouse.

The floor plan of the lumber storage shed is essentially one large room which opens out through large arched windows and doors to a courtyard where the Daniels Planing machine was located. The arched openings are glazed from the springline of the arch, while on the north elevation the five doublehung windows are glazed with 12/12 lights.

The present floor of the room is concrete since the room was used as a Power House/Dynamo Room in the 20th Century. Three concrete platforms for the machinery installed during that time are still present.

Carpentry Shop

Possibly the first shop to be completed in the new motive power yard was the Carpentry shop. [51] The building (as originally conceived) formed nearly three sides of a hollow square, and comprised facilities for "building, repairing, and painting cars of all kinds." [52] A wood planer was located on the Eastern side of the Carpentry shop; this side of the building was probably always the planning room.

At some time prior to 1891 a wooden lumber storage shed was constructed on the site of the open platform in the center of the square. A room was added to the southern end of the planing mill next to the lumber room and used in later years as a machine and locker room.

On November 16, 1923 a fire destroyed most of the Carpentry Shop building.

Except at the end towards the planing mill, where firemen checked the flames before the machinery and buildings were totally destroyed, there will be absolutely no salvage . . [53]

The 1923 Annual Report lists the following shop buildings destroyed by the fire: Paint shop, Coach and Cabinet Shop, Plumbing Shop, Upholstery Shop, and a number of small sheds and minor buildings. [54] The location of these rooms in the Carpentry building can be determined by referring to Sanborn Insurance Maps.

Replacement began immediately incorporating what remained of the old Planing Mill.

During the time that plans for the new buildings were being prepared a temporary paint shop was erected and the Planing Mill was rebuilt so that within forty days after the fire, work of repairing and painting coaches was resumed. [55]

The rebuilt structure made use of those original trusses that were not burned. The exterior walls were surmounted by a brick parapet beneath which were a row of dentils much like that on the Up Freight Warehouse,

and Lumber Storage Shed. Arches that once provided light and ventilation to a basement portion of the carpentry shop were bricked in at this time.

The temporary paint shop was removed to make way for a new storehouse erected in 1925 next to the Planing Mill remains of the Carpentry Shop. The windows along the east wall of the Planing Mill were bricked in and formed the West Wall of the new storehouse. [56]

Because of the advanced deterioration of the Planing Mill remains it is probable that the major portion of the old truss structure will collapse within the next few months.

Stack

The great chimney stands in the yard between the Engine House and Blacksmith Shop. It is 125' high. Its design is ornamental and most original. Its form is polygonal, giving it the appearance of a fluted circular columns. Around the base are projecting buttresses forming cells between them. These cells have each deep vaults between them, and are appropriated as privies for the men. Upon the top of these cells, or of the buttresses which form them, is a cast iron tank, holding 40,000 gallons - The outsides are paneled, richly ornamented. These panels were cast by D. & W. Rose. It must be understood that this tank encircles the great chimney shaft. The chimney top is laid up in ornamental brickwork, and is surmounted with a heavy cast iron top. This chimney draws the smoke from all the blacksmith, coppersmith, and boiler shop fires, as well as from the boiler of the stationary engine. The water pumped into the tank goes to supply the tenders. Every stall in the engine house has a pipe and valve for filling the tenders. [67]

This is a most elaborate and unusual stack. Notable nearby stacks include a smaller, less elaborate, polygonal structure in Charleston, S. C. and the chimney of the Confederate Powder Works at Augusta, Georgia, a red brick obelisk. The combination of privy and stack, however, appears to be unique.

In the 1960's the top of the chimney was dismantled for salvage. An interesting detail on the cast iron tank is a cast iron footage indicator in the shape of a heart and arrow which mark the level of the water in the tank by means of a float system.

Engine House

In 1852 the walls of the Engine House were erected and awaiting the arrival of its iron roof. This Round House as described in the Savannah Daily Morning News of 1855 was a "circular engine House of brick, 250' in diameter, and containing 40 stalls or pits, with water pipes on each track for filling tenders. This building has an iron roof, around the circles in which the engines stand, the center being left open. The floor of this building is laid with brick pavement; the inner cornice and roof rest on cast iron columns." [58]

It seems that no changes were made to this structure until 1881 when the report of the Master Machinist indicated that the hurricane of that year did considerable damage and dislocated a part of the round house. [59] This damage was repaired the following year. [60]

In 1886 a new turntable was installed, probably indicating increased length of engines. [61]

In 1888 a new roof was designed by Augustus Schwaab for the Round House, and the turntable was replaced again in 1906 and 1923. The 1923 turntable was the 75' table removed from Columbus and it replaced a 65' table at Savannah.

In 1926 18 stalls of the round house were rebuilt. The new stalls were 95 feet 4 inches long and built of reinforced concrete. The engine pits were extended 43 feet, providing space for a Whiting Electrical drop table. The scope of work included demolition of a portion of the previous round house, the lavatory room, and former boiler shop adjoining the round house. [62]

All but a fraction of the walls of the earlier round house have been removed by 1975, so that the present round house is essentially a 1926 structure.

Architects, Engineers and Iron Founders

The architects and engineers who designed the individual buildings at the Savannah Depot deserve far more credit than they have yet received in Savannah's architectural histories.

The earliest documented reference to Augustus Schwaab is in the 1859 Superintendent's Annual Report which mentions that the brick bridge across the Ogeechee Canal was approaching completion under the charge of Mr. Augustus Schwaab, Civil Engineer. The Superintendent's comment that the bridge would be a lasting monument to Mr. Schwaab's skill as an engineer [63] is certainly appropriate in light of the long list of his contributions to Savannah in the building art and by the fact that the bridge has changed little.

Tradition credits Schwaab, architect-engineer Martin P. Mueller with having designed the stack, Machine Shop, Blacksmith Shop, Engine/Boiler Room, Carpenter's Shop, Up Freight House, Down Freight House, Gray Building, and other structures in the complex. [64] The source for this attribution appears to be an undocumented article in the Right Way Magazine, a publication of the Central, dated March, 1925. Other than the stylistic similarities with later buildings there is no written evidence that Mueller and Schwaab were the architects of these buildings. In fact the earliest dated reference to the firm of Mueller and Schwaab is not until that firm's incorporation in 1870. [65] Admittedly, since Schwaab was the engineer for the Passenger House in 1860, [66] he could have conceivably designed the rest of the complex, but further documentation will have to be found to sustain this theory.

The 1860 Census lists an Augustus Schwartz, 45, born Hanover, Germany. If this is indeed Augustus Schwaab, then the census taker was mistaken in both Schwaab's name and perhaps even his age which does not agree with that given at the time of his death.

There are no other references to Schwaab until after the Civil War in which he apparently attained the rank of Major.

In January, 1870, Schwaab formed a co-partnership with Martin P. Muller and the firm was known as Muller and Schwaab, architects and engineers. They immediately received the commission to build a new City Market (demolished 1954) [67]. The structure was surmounted by three roofs, the middle one 50 feet from the level of the street, the adjoining roofs on either side attained a height of 37 feet. The arched windows and general appearance of the building bears a strong resemblance to the Machine Shop of the Central, built 20 years before.

In 1870 the firm of Muller and Schwaab designed an iron bridge at the foot of Drayton Street which was probably removed in 1886 during construction of the Cotton Exchange. [68]

Their interests took them into varied fields. They invented steam propelled canal boats that worked on the principle of a locomotive and contended for a premium of \$100,000 offered by the Legislature of New York for the best and simplest plan for propelling boats on the Erie Canal with steam. [69]

The Savannah Daily Morning News wrote at the time that "Savannah mechanical and inventive genius has, on numerous occasions, been rewarded with gratifying success, and we trust that such may be the case in this instance." [70]

After 1874, Augustus Schwaab carried on his business on Bay Street, completing a small, two story brick dwelling for Laurence Dunn at the corner of Houston and Congress Streets, a modest low-stooped house with overhanging, bracketed roof, and he built the Savannah Hotel on Congress Street between Jefferson and Montgomery Streets (now demolished). In 1880 and 1884 he designed several cotton factories in a "plain, but substantial manner." [71] Neither factory stands today. In 1885 he completed the double residence for the Mohr Brothers on Gordon Street, a three story stucco over brick structure with corbels under a projecting bracketed roof. [72]

Augustus Schwaab died in 1899 in Milledgeville. His death notice gives his age as 78 years old. [73] He is buried in Laurel Grove Cemetery in Savannah.

MARTIN P. MUELLER (later spelled Muller), also a native of Northern Germany, was an engineer with the Charleston and Savannah Railroad Company. [74] In 1861 he formed an architectural firm with F. W. Fulton, Jr., [75] a partnership which did not last long, for in 1866 he teamed up with Dewitt Bruyn and worked on completing the plans for the Mercer-Wilder House which John Norris had begun before the War. In 1867 they (Muller and Bruyn) had completed the Wylly-Meinhard building on Broughton Street which featured decorative cast iron work from the Foundry of Bartlett, Robbins and Co. of Baltimore. [76] In 1869 they completed the Kelly Range on the River which burned in 1876. [77]

Muller designed the iron suspension bridge across the thoroughfare leading down the bluff to the River, at the front of Abercorn Street. The castings were completed at the Foundry of Mr. A. N. Miller, [78] the same man who 20 years before had provided a single cylinder beam engine encased in an elaborate Gothic frame in the Engine Room of the Central of Georgia Railroad, Savannah Shops.

The association of Muller and Bruyn was dissolved by mutual consent in 1870, the same day the co-partnership between Muller and Schwaab was formed. [79]

Muller left Savannah for Albany, Georgia in 1874 when he was appointed assistant engineer for the Atlantic and Gulf Railroad. He died in Albany in 1876 of consumption. [80]

ALVIN N. MILLER'S Iron Foundry was established at the Eastern wharves in 1839. In 1848 he is listed in the Census of the City of Savannah by Joseph Bancroft as a manufacturer of all kinds of mill and locomotive machinery. [81]

Miller was a native of New York, and he and a fellow apprentice, John Roach, a ship builder, learned the trade of machinist and foundryman in the same shop.

Miller came to Savannah in the 1830's, and was Superintendent of the Iron Steamboat Company, which operated a line of steamboats between Savannah and Augusta. At his foundry on the eastern wharves he constructed a great deal of machine and cast ordinance for the Confederate Government including some of the heavier cannons.

After the War he had charge of the Usina and Jones drydocks on Hutchison's Island and was Port Warden for several years. He then became superintendent of the construction of the waterworks and later Superintendent of the waterworks, until his death in 1889. [82]

Colburn's New York Railroad Advocate had this to say about Miller's machine for the Central of Georgia Engine Room in 1855:

The engine is of Savannah build, from the work of A. N. Miller. It is a single cylinder beam engine, 15-inch bore, and 48-inch stroke. The frame is of the arbor pattern, of exquisite proportions and beautifully ornamented with tracery and gothic details. Were we to say that this engine was built at the Novelty Works, or at the Boston Steam Engine Works, none of our readers would reject our statement, that it is of beautiful design and finish. But being of Southern construction, there are many who would not suppose it to possess any extraordinary excellence. But in the most practical sense, and with the knowledge of Stillman, Allen, and Company's and Tufft's patterns, we say we have seen no engine of equal size, and of Northern manufacture, which excelled . . . [83]

DAVID AND WILLIAM ROSE were natives of Preston, England. William who came to Savannah about 1851 was employed in the Central Road Shops and then went into the foundry business with his brother, David. [24] The first ad for D & W Rose Foundry Works appeared in the Daily Morning News in 1855. [85]

Specializing in steam boat work, stationary engines, saw mills, and rice mills, they soon added ornamental cast work such as Cemetery Railing, fences, and balconies to their list of manufacture. Examples of this work are abundant in Savannah.

During the Civil War, under the name of Rose, Arkwright, and Company the firm had large contracts with the Confederate Government for munitions and succeeded in saving its fortunes at the end of the War. William Rose retired from the partnership in 1867 and became U. S. Inspector of Steamboats for the Savannah District.

David and William Rose provided the cast iron water tank of gothic design around the stack in the Central of Georgia Shop yard.

Areas for Futher Research

This report has attempted to put together as much information as possible from local sources on the structures at the Central of Georgia Savannah Depot and about the men who designed them. In the three months of research many questions have been raised that are still unanswered and new sources of information are turning up daily.

It has been disappointing that so few 19th Century documents such as photographs, letters, and plans have turned up. This writer feels certain that such material exists in private collections in the City and hopes that the recent publicity about the site will bring these documents to light.

Charles Peterson, on a recent visit to Savannah, has made the suggestion that copies of DeBoe's Review be located and checked. This was a magazine like Harper's and Leslie's, but dealt heavily with what was going on in the South. Mr. Peterson also mentioned that the Philadelphia Athenaeum has a large collection of Railroad Periodicals etc. which should be checked.

Peterson further states that he feels the metal truss in the train shed is definitely of European origin, possibly French or German. This would be logical as Augustus Schwaab was born in Hanover, Germany. Further inquiry into his background, education and immigration may give the source of the truss as well as the source for the castellated buildings of the shop complex which Mr. Peterson also think have a German origin.

The Philadelphia Free Library, he states, has an extensive collection of German and French technical magazines which should also be reviewed in a further study.

It is also possible that there might be photos of the site taken by the Union Soldiers during the Savannah occupation, located in the Library of Congress. So many Engineers became engineers for the military during the war and this site, because of its extent, elegance and recent acclaim would certainly have attracted their attention.

It would be of use to compare the buildings stylistically with those of the Albany and Culf Railroad, therefore sources for the records of this company need to be identified.

Undoubtedly there is more pertinent material in the vaults of the Central of Georgia. However, most of this material is uncatalogued. The 19th Century materials such as plans and specifications should be located in an appropriate archives such as the Georgia Historical Society for the purposes of preservation and general access by scholars.

In conclusion, I would like to acknowledge the help of John C. Lebay, FAIA, Hunter Saussy, Jr., the Georgia Historical Society, the staff of the Southern Railway, Mrs. Howard Morrison, St. and all the people who have helped track down clues to sources of documents in private collections.

FOOTNOTES

INTRODUCTION

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PASSENGER STATION AND TRAIN SHED

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⁴Engineer's Report, Eleventh Annual Report, CRBC, 1845, L. O. Reynolds, Chief Engineer (Savannah: John M. Cooper & Co., 1854) p. 127.

⁵Superintendent's Report, Sixteenth Annual Report, CRBC, 1850, William M. Wadley, Superintendent (Savannah: John M. Cooper & Co., 1854) p. 225.

⁶Superintendent's Report, Seventeenth Annual Report, CRBC, 1851, William M. Wadley, Superintendent (Savannah: John M. Cooper & Co., 1854) p. 245.

⁷President's Report, Eighteenth Annual Report, CRBC, 1852, R. R. Cuyler, President (Savannah: John M. Cooper & Co., 1854) p. 251.

⁸Superintendent's Report, Twenty First Annual Report, CRBC, 1855, William M. Wadley, Superintendent, p. 37.

⁹Superintendent's Report, Twenty Second Annual Report, CRBC, 1856, William M. Wadley, Superintendent, p. 63.

¹⁰ General Superintendent's Report, Twenty Third Annual Report, CRBC, 1857, Emerson Foote, General Superintendent, 1857, p. 87.

¹¹ Superintendent's Report, Twenty Fourth Annual Report, CRBC, 1858, George W. Adams, Superintendent (Savannah: G. N. Nichols, 1868) p. 114.

¹² Savannah Daily Morning News; 27 April 1859, page 1, Col. 2.

¹³ General Superintendent's Report, Twenty Sixth Annual Report, CRBC, 1860, George W. Adams, General Superintendent (Savannah: G. N. Nichols, 1868) p. 175.

¹⁴ Minutes of the Board of Trustees, Central Railroad and Banking Company of Georgia, 10 April 1860, Vol. 3, p. 26.

¹⁵ Superintendent's Report, Twenty Seventh Annual Report, CRBC, 1861, George W. Adams, Superintendent (Savannah: G. N. Nichols, 1868) p. 201.

¹⁶ Savannah Morning News; 19 October 1875, page 3, column 4

¹⁷ New Improvement Book for 1876, Georgia Historical Society

¹⁸ Typewritten copy of note containing information given to Virginia Corish by Mr. J. W. Adams in 1942, xerox copy in possession of Beth Lattimore.

¹⁹ Savannah Morning News; 9 August 1876 Page 3, Column 4

²⁰ Ibid

²¹ Interview with Robert D. Gunn, 27 August 1975, by Beth Lattimore

GRAY BUILDING

²²General Superintendent's Report, Twenty First Annual Report, CRBC, 1855, William M. Wadley, General Superintendent (Savannah: G. N. Nichols, 1868) p. 36-37.

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²⁵Daily Morning News; 17 July 1855, page 1, Cols. 2 & 3.

²⁶Daily Morning News; 27 April 1859, page 1. Col 2.

UP FREIGHT WAREHOUSE

²⁷General Superintendent's Report, Eighteenth Annual Report, CRBC, 1852, MacPherson B. Millen, General Superintendent (Savannah: John M. Cooper & Co., 1854) p. 258.

²⁸Superintendent's Report, Nineteenth Annual Report, CRBC, 1853, William M. Wadley, Superintendent (Savannah: John M. Cooper & Co., 1854) p. 270.

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COTTON YARD GATES

³¹General Superintendent's Report, Twenty Second Annual Report, CRBC, 1856, William M. Wadley, General Superintendent (Savannah: G. N. Nichols, 1868) p.63.

³²Right Way Magazine; September, 1926, p. 15.

Red Building

³³General Manager's Report, Fifty Second Annual Report, CRBC, 1887, M. S. Balknap, General Manager, p. 38.

³⁴Savannah Morning News; 24 April 1887, p. 10, c. 1.

³⁵Ibid. See also: Savannah Morning News; 20 May, 1887, p. 8., c. 2, and Savannah Morning News 8 February 1888, p. 8., c. 1.

Down Freight Warehouse also Known as Produce Freight Warehouse

³⁶Daily Morning News; 27 April 1859, p. 1., c. 2.

³⁷General Superintendent's Report, Twenty Fifth Annual Report, CRBC 1859, George W. Adams, General Superintendent, p. 143.

³⁸General Superintendent's Report, Twenty Sixth Annual Report, CRBC 1860, George W. Adams, General Superintendent, p. 174.

³⁹General Superintendent's Report, Forty third Annual Report, CRBC, 1878, William Rogers, General Superintendent, p. 14.

⁴⁰President's Report, Third Annual Report, C of G, 1898, H. M. Comer, President, p. 8.

Machine Shop

⁴¹Daily Morning News; 17 July 1855, p. 1., c 2 & 3.

⁴²Interview by Beth Lattimore with E. Gillis, former blacksmith with Central of Georgia Railroad, August 1975.

⁴³General Superintendent's Report, Eighteenth Annual Report, CRBC, 1852, MacPherson B. Millen, General Superintendent (Savannah: John M. Cooper, & Co. 1854) p. 258.

⁴⁴Daily Morning News; 17 July 1855, p. 1., c. 2 & 2.

⁴⁵Ibid.

⁴⁶Master Machinist's Report, Thirty First Annual Report, CRBC,
1865, B. L. Boulineau, Master Machinist (Savannah: John M. Cooper & Co.)
p. 234.

⁴⁷Savannah Morning News; 11 June 1877, p. 3 Col. 2.

Tender Frame Building

⁴⁸Vice President's Report, Fourth Annual Report, C of G, 1899,
John M. Egan, Vice President, p. 10.

Engine / Boiler / Pattern Room

⁴⁹Daily Morning News; 17 July 1855, p. 1., c. 2 & 3.

⁵⁰Ibid.

Carpentry Shop

⁵¹General Superintendent's Report, Eighteenth Annual Report, CRBC,
1852, MacPherson B. Millen, General Superintendent, p. 258.

⁵²Daily Morning News; 17 July 1855, p. 1., c. 2 & 3.

⁵³Savannah Morning News; 18 November 1923, p. 16.

⁵⁴Report of the Chairman of the Board, Twenty Ninth Annual Report,
C of G, 1923, Charles H. Markham, Chairman of the Board, p. 9.

⁵⁵Right Way Magazine, May, 1925 p. 24.

⁵⁶Specifications for Store House at Savannah, Georgia, Office
of Chief Engineer, Central of Georgia Railroad Co., 5 February 1925.
Copy in vault in Red Building.

Stack

⁵⁷Daily Morning News; 17 July 1855, p. 1., c. 2 & 3.

Engine House

⁵⁸Ibid.

⁵⁹Report of the Master Machinist, Forty Sixth Annual Report, CRBC
1881, D. D. Arden, Master Machinist, p. 60.

⁶⁰Report of the Master Machinist, Forty Seventh Annual Report, CRBC,
1882, D. D. Arden, Master Machinist, p. 79.

⁶¹Fifth First Annual Report, CRBC.

⁶²Scope of Work, 1926 Engine House, Office of Chief Engineer,
Central of Georgia Railroad, located in Red Building Vault.

Architects, Engineers and Iron Founders

⁶³General Superintendent's Report, Twenty Fifth Annual Report,
CRBC, 1859, George W. Adams, General Superintendent, p. 142.

⁶⁴Right Way Magazine, March, 1925

⁶⁵Savannah Morning News (hereafter referred to as SMN); 3 January
1870, p. 2., c. 6.

⁶⁶Minutes of the Board of Trustees, CRBC, 10 April 1860, Vol. 3,
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⁶⁷SMN; 6 September 1870, 3/2.

⁶⁸SMN; 29 July 1870.

⁶⁹SMN; 1 July 1872, 3/1.

⁷⁰Ibid.

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⁷³Records of Burials, Laurel Grove Cemetery, Georgia Historical Society.

⁷⁴Daily Morning News; 17 April 1860, 2/1.

⁷⁵Daily Morning News; 7 March 1861, 2/1,

⁷⁶Daily News Herald; 6 June 1867, p. 3 c. 1.

⁷⁷SMN; 24 August 1869, 3/2.

⁷⁸Daily News Herald; 13 May 1868, 3/1.

⁷⁹SMN; 3 January 1870, 2/6.

⁸⁰SMN; 19 October 1876, 3/3.

⁸¹Joseph Bancroft, Census of the City of Savannah, (Savannah:
Edward J. Purse, 1848)

⁸²SMN; 25 March 1889.

⁸³Daily Morning News; 17 July 1855, p. 1., c 2 & 3.

⁸⁴SMN; 31 July 1878.

⁸⁵Daily Morning News; 31 May 1855, 2/6.

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This book located in the Georgia Historical Society collection contains excellent monographs on businesses of the times in Savannah.

Central Railroad and Banking Company of Georgia, Reports of Presidents, Engineers.in.Chief and Superintendents, #1-19, inclusive with Report of Survey by Alfred Cruger, and the Charter of the Company. Savannah: John M. Cooper & Co., 1854.

Central Railroad and Banking Company of Georgia, Reports of Presidents, Engineers.in.Chief, and Superintendents, #20-32 inclusive and the Amended Charter of the Company. Savannah: G. N. Nichols, 1868.

These two bound volumes of reports located in the Gray Building of the Central of Georgia provide yearly discussions of the development of the depot. They fail however, to go into any great detail and should be used in conjunction with the Board Minutes which unfortunately are not readily available for scholars to use. In addition to these Annual Reports there are many more privately bound volumes of Reports through the Mid 20th Century located in the vault at the Gray Building.

Condit, Carl W., American Building Art, The Nineteenth Century. New York: Oxford University Press, 1960.

Excellent chapters on Railroads and engineering construction.

Feiss, Carl et al., Historic Savannah, 1968.

Good reference book for architecture in Savannah. The first edition contains many inaccurate dates and should be used with care.

Meeks, Carroll, The Railroad Station, New Haven: Yale University Press, 1964.

Excellent reference work for the development of the Railroad Station as a building form.

Minutes of the City Council of Savannah.

A complete set on microfilm at the Georgia Historical Society. These minutes provide prime sources for the development of the Central's site. Index included.

Right Way Magazine

A publication of the Central of Georgia, copies begin with April, 1913 later became the Central of Georgia Magazine. Good source for 20th Century photos. The historical articles are not footnoted and are not terribly accurate or useful. The negatives and plates for the photos are still available in the Gray Building.

Savannah Morning News, Daily Morning News, and Daily News Herald

Both the Georgia Historical Society and the Savannah Public Library have indexes and microfilm for these 19th Century Savannah newspapers. The Savannah Public Library has a more complete set of indexes which go through 1895. These papers give first hand accounts of activities at the Central depot on a regular basis and are a valuable source.

Trainshed Cyclopedia # 19 "Buildings and Structures of American Railroads, 1893 (part 3) Novato, California: Newton K. Gregg, publisher, 1974.

Part of a reprint series, valuable as background information.

Tax Assessment and Digest Books, City of Savannah, 1854-1910, broken series.

Located in the Georgia Historical Society these books are primary sources for values of structures and useful in dating structures.

New Improvement Books and Building Permits, various years

Valuable in dating improvements at the Central Depot

Wadley, Sarah, A Brief Record of the Life of William M. Wadley. New York: J. C. & W. E. Powers Press, 1906.

Could not locate a copy of this in Savannah. Fort Pulaski has transcript of notes taken from the manuscript. Helpful for background of Wadley.

Edward A. Vincent Map of Savannah. New York: Snyder and Black, lithographers, 1853.

Shows outline of all buildings in Savannah at the time and indicates whether they were brick or wood.

Birds Eye View of the City of Savannah, Georgia. St. Louis: A. Ruger, 1871.

Birds Eye View City of Savannah, Georgia. Savannah: Augustus Koch, 1891.

These two views show in infinite detail the buildings located on the Central site, however the 1871 view may be inaccurate due to perspective problems and should be used with care.

Waring, Charles ed. Three volumes of photocopies of Maps of Savannah and Vicinity compiled by Mr. and Mrs. Charles E. Waring and deposited at the Georgia Historical Society Library. These maps are invaluable in dating the physical development of the Central site.

CENTRAL OF GEORGIA RAILWAY SURVEY 1975

THE CENTRAL OF GEORGIA SHOP COMPLEX

SAVANNAH, GEORGIA

1853-1926 (Paint Shop--1907, rebuilt 1924-1925; Storehouse -- 1926;
Roundhouse rebuilt 1926)

The Savannah Shops of the Central Railroad and Banking Company -- Central of Georgia Railway provide the historian with the ideal candidate for a study of railroad shop history. The shops are the only surviving antebellum railroad complex of this scale in this country. The fact that the whole complex was built at one time and has served the same functions for a century enables us to trace changes in shop practice by noting the changes within the remaining buildings and those buildings that have been added.

John Bartley Schmitt, Historian

It is understood that access to this material rests on the condition that should any of it be used in any form or by any means, the author or draftsman of such material and the Historic American Engineering Record of the National Park Service at all times be given proper credit.

As Professor Hughes said "The invention and development of the Railway system was a century long experience with psychological, institutional, idealogical, sociallogical, and technological facets." ¹ Many facets of the railroad have received extensive treatment by historians and railroad buffs. The histories of Railroad Corporations have been considered by economic historians; buffs and academicians have written steam locomotive histories; and authors such as Leo Marx have considered psychological and ideological aspects of railroading. One vital aspect of railroad history that has been neglected is railroad shops.

An historical study of the railroad shop provides an entré into technological history at two levels: first, it reflects trends in railroading technology and second, it relates to broader developments in shop practice as seen in other industries. In the past one and a quarter centuries, there were vast changes in Railroad motive power - steam locomotives switched from wood to coal fuel and became much larger and stronger in response to heavier train loads. Toward the end of this period - the steam locomotive was being displaced by diesel-electric locomotives. Railroad freight and passenger cars changed from wooden structures little different from wagons or stage coaches to steel structures specially adjusted to their function. Road beds and rail design changed in this period from light iron T-rail on stringers to heavy steel T-rail directly on crossties. In a broader context, the Shops also illustrated changes in American industrial techniques, and the development of the "American system of manufacture." Shop motive power changed from steam engine with belting and shafting - to

electric motors with belting or other transmission - to compressed air tools. Advances in the machine tool industry were important to railroad shops: the railroads used huge lathes, planars, milling machines, and grinders for metal working. Various wood-working tools were also employed. The shops were keen to adopt new methods of metal fabrication and repair, including electric, oxy-acetylene, and thermit welding.

Given the historical significance of railroad shops, how might we best study them? A valuable approach that would have to precede a thoroughgoing comparative history of railroad shops is to consider the history of a particular shop complex. An ideal candidate for such study is the Central of Georgia Depot Complex at Savannah. It is the only surviving ante-bellum railroad depot complex of this scale in the country. This Depot provides the historian a unique opportunity to examine the role of a shop in the history of a railroad. The Savannah Depot was designed as an integrated whole - a facility to serve the passenger-freight service and the repair needs of the railroad. Most of the 1850's buildings still stand. This site illustrates the changing needs of the railroad by the changes within the original buildings - the new equipment added and the modifications to the structures themselves - and in the new buildings that were added e.g. a coach and paint shop, warehouses, and storehouses.

THE ORIGINS OF THE CENTRAL RAILROAD

Common Geographical factors shaped the railroads of Georgia and South Carolina. The main reason for wanting rail transportation was to facilitate movement of staple (cotton) from point of production to point of sale/export. Cotton production was concentrated in piedmont sections of South Carolina and Georgia. The piedmont was separated from the

coastal seaports by the pine barrens - areas of sparse population which produce little staple. This was not the ideal geographical paradigm for profitable railroad building. Practically all the traffic of such a railroad would be in one direction, at one time of the year - cotton harvest. The pine barrens would produce negligible way traffic.²

Whatever problems it might have found, the first railroad of the South was built by Charleston interests, from Charleston to Hamburg, opposite Augusta on the Savannah River. Why did Charleston want a rail connection with the Savannah? Agricultural trends provide the answer. In the 19th Century, the center of cotton production shifted westward, bringing prosperity to Savannah, Mobile, and New Orleans.³ Charleston's revenues were declining, and its alarmed merchants saw a railroad to the Savannah River as their hopeful salvation. Georgians built a railroad from Augusta to Athens to extend the South Carolina road into cotton-rich hinterlands. The Georgia Railroad, chartered in 1833, was to serve as a line feeding the newly completed South Carolina road.⁴ It was no accident that the South Carolinians built to a point on the Savannah opposite the fall-line town - Augusta. Augusta was the head of navigation on the Savannah and was thus a center of cotton trade. Planters sold their crops at Augusta and other fall-line towns and bought provisions for the year. By building a rail line to Augusta, Charleston interests hoped to divert cotton which would have gone down river to Savannah, to their own port. With the South Carolina Railroad finished and the Georgia railroad organized, it was clear that old patterns of trade were shifting and that Savannah stood to lose much of her cotton trade to Charleston. To expand the sources of her trade, Savannah interests obtained a charter for the Central Railroad and Canal

Company on December 20, 1833.⁵ This company was empowered to build a railroad/canal to Macon, in Central Georgia. The idea of a canal was soon dismissed, and the company was rechartered as the Central Railroad and Banking Company in 1835 (the bank was to secure the financial stability of the undertaking.) In 1843, the 190 miles of trunk line were complete to Macon.⁶

THE ORIGINAL DEPOT

The original Savannah Depot of the Central was a tract of five acres "bestowed on the company by the City Council of Savannah."⁷ The site was located on land once part of the Spring Hill Plantation and hence the name "Spring Hill Depot." The Engineer's Department began the construction of a brick machine shop at Spring Hill in 1838. It was "on a scale suited to the magnitude of the enterprise."⁸ The machine shop and Depot were still under construction in 1840, when the Central was running seven engines, five passenger, and 65 freight cars over 100 miles of track.⁹ The Spring Hill Depot handled both transportation and motive power departments. The passenger depot was completed by 1845.¹⁰

THE "1855" DEPOT

A Depot suitable to the magnitude of the Central Railroad in 1840 would not have been suitable for long. We can gauge the growth of the road's traffic by the increase in the number of cars and engines employed. By 1844, the motive power stood at 14 engines - double the figure four years previous. The rolling stock had more than doubled to 150 eight-wheeled burthen cars.¹¹ By 1849, the Road was running 246 cars with 24 locomotives.¹² The new Superintendent, William M. Wadley, saw the need for increased depot capacity to handle this increase in cars and motive power. In 1850, Wadley announced that land for a new larger

Savannah depot had been purchased. Wadley planned the complex to accommodate greatly increased traffic that the expanding company might expect. Construction of the new Savannah Depot was begun in 1851.¹³ By 1855 when the shops were completed, the mileage of the Central System had increased from 294.7 to 527.8 miles.¹⁴ The rolling stock was 666 cars and the motive power numbered 55 locomotives.¹⁵ The new facilities were well utilized by the increased traffic.

What facilities were provided by the new shops and how were the buildings arranged? To answer these questions, we must consult a plan of the Depot and describe the buildings. A colorful portrait of the shops in 1855, is provided by an article written for Colburn's Railroad Advocate which appeared in the Savannah Daily Morning News, the same year.¹⁶ This Northern journalist was quite favorably impressed by the Savannah Depot, calling it "the most complete and elegant railroad station in the country." He particularly commented on the integration of the facility - the provision for all facets of freight, passenger, and repair services within a single complex. The motive power was housed in the 250' diameter brick roundhouse which had 40 stalls or pits for engine accommodation. Water pipes for filling tenders were supplied at each stall. The machine shop adjoining the roundhouse was described as "certainly one of the finest repair shop rooms in the United States." It was 18' deep in the walls, and was roofed, as were the other shop buildings and roundhouse with corrugated iron and iron tie rods from Messrs. A. Whitney and Sons, Philadelphia. The machine shop power was derived from the engine room via shafting hung from the walls and counter-shafting from the roof.¹⁷ The shafting was manufactured by Bancroft and Sellers, Philadelphia. The work benches were of hard pine with six-inch thick

work surfaces. The machinery included a heavy engine lathe of seven foot swing with three "shears" or slides. It was manufactured in Philadelphia by Bement, Dougherty, and Thomas. A coppersmith's and boiler smith's shop also adjoined the roundhouse.

The Blacksmith Shop, 160 by 40', adjoined the machine shop. It contained rows of forges, one row along each wall of the building. It was lighted and ventilated via a monitor running the length of the building. Immediately to the rear of the Blacksmith Shop was a range of vaults under the street for storing iron, coal, and other materials. The amount of a material on hand could be estimated at a glance, as the volume of each was indicated at intervals on the wall. These vaults were filled from the street above through chutes. The forges in the boiler smith's, the blacksmith's shops, and the foundry in the coppersmith's shop, and the engine boiler were all served by the stack which was built at the center of the complex, between the blacksmith shop and the roundhouse.

The boiler and engine were in an ornamental brick building 60' by 35'. The boiler was of locomotive pattern. The engine, built by A. N. Miller of Savannah, impressed Colburn's with its "elegance of design" and "perfection of finish."

The stack was a remarkable structure combining a fluted column with flared capital. The tank, of ornamental cast-iron, supplied water to the shops and locomotive tenders. Below the tank, the stack was surrounded by privies for the shop workmen, the buttresses projecting around the base forming cells between them.

The Carpentry Shop comprised some 25,000 feet of floor space - one quarter of the total enclosed area of the complex. (the roundhouse covered 50,000 square feet so, relative to the other shops, the carpentry shop

was quite large.)¹⁸ The only carpentry building machinery that Colburn's article commented on was the Daniel's planing machine, which was covered by a brick shed projecting 63' from the Lumber Storage Room.

There was evidence of wise planning in the 1855 shop complex. The situation of the Shops near the Freight and Passenger Departments was desirable. The Administration of the various departments was facilitated by their proximity and the consequent ease of communications. All the Savannah business of the Railroad could be carried out at the Depot. Any Shop or Repair work for the whole Depot could be done - a new forging for a part in the Up Freight Warehouse Sliding Section could be easily sent over from the Blacksmith Shop. Carpentry work for repairs or new buildings anywhere in the Depot could be done in the shops. Engines anywhere in the Depot were close to repair facilities.

Integration of buildings within the shop complex was also notable. The stack was the epitome of a multi-purpose structure. The stack served a variety of roles - as a smoke stack, it drew exhaust gasses through tunnels from the shop boilers, the blacksmith shop forges, the boiler-smith's shop, and the foundry in the copper smith's shop. The 40,000 gallon cast-iron tank that encircled the stack provided water to engine tenders and the rest of the shops. Pipes carried this water to each of the engine stalls in the roundhouse. The base of the stack was ringed by privies for the workmen.

The arrangement of buildings around the engine or roundhouse was designed to facilitate locomotive repairs or locomotive building. The bays in the angles between the machine shop and roundhouse were occupied by the coppersmith's shop and the boiler shop - both important to engine

repair. The coppersmith's shop was used to repair the copper fire-boxes and tubes used in Ante-bellum locomotives. The boilersmith's shop had to be near the machine shop for easy transfer of boilers between the two. The closer the boilersmith's shop to the point of engine disassembly, the less time was wasted in transporting parts. The machine shop was also convenient to the roundhouse; one track ran from the turntable directly into the machine shop. Engines due for major repairs could be rolled in on this track for disassembly. The various components needed to be machined or repaired were taken to the appropriate area of the shop. The blacksmith shop was convenient to both chimney and machine shop. Forgings could be easily transferred from the machine shop to the 10 ton steam forge in the blacksmith shop.¹⁹ The proximity of the blacksmith shop to the boiler room was necessary for two reasons: first, both used a common stack and second, the steam hammer in the blacksmith shop would work more effectively close to its steam source.

The rectilinear configuration of the shops was dictated by power transmission from the engine room via iron shafting from the ceiling trusses. The main shaft to the machine shop passed through a cast iron section of the engine room wall into the blacksmith shop. The main shaft to the machine shop was about 240' long.²⁰ To power machinery at the North end of the shop, shafting was run down the East and West walls of the machine shop towards the roundhouse.

The right angle power transmission between shafts was probably by bevel gears.

The total length of main shafting from the engine house to the Northeast corner of the machine shop was about 400'. There may have

been counter shafting from the ceiling of the machine shop to avoid belts criss-crossing the shop. ²¹ The shafting to the carpentry shop ran about 160' to the Southwest corner of the planing mill. The Daniel's planing mill was probably run from this shaft. The shafting in the carpentry shop itself may have run in the basement; this shop did have a full basement. ²²

The Carpentry Shop was some distance from the latter, but it was convenient to the boiler. The planing mill was adjacent to the boiler. Wood chips from the planer and carpentry shop were produced quite near the boiler where they were burned. ²³ The carpentry shop had to be separated from the rest of the complex to be served by its transfer table, which allowed cars full access to all of the carpentry shop.

ADMINISTRATION OF THE SHOPS

The administrative structure of the Railroad was relatively constant from the 1840's until after the war. ²⁴ In 1842, the three departments of the railroad were Transportation, Road, and Mechanical. The staff of these three departments reported to the Chief Engineer, who was responsible to the President of the Road. In 1849, Chief Engineer Reynolds, who had built the railroad, was replaced by a General Superintendent, William M. Wadley. The President and management seem to have realized that a civil engineer qualified to build the road and superstructure might not be most qualified to administer the business. Wadley was a successful Superintendent; he designed the shops and Depot at Savannah and was invited back to the Central as President following the War.

The shops themselves were the responsibility of two men who reported to the Superintendent: the Master Mechanic and the Master Carbuilder (or Master Carpenter). Although both Masters were in the 'Mechanical Depart-

ment", the expenditures of their staff were figured separately. The Master Mechanic was paid more; perhaps the responsibility for maintenance of steam locomotives was seen as a more critical position. Shoddy locomotive repairs could surely have had disastrous consequences. 25

When Wadley returned to the Central as President in 1866, he re-organized the railroad, putting each phase of the operation under a different "Master", such as Master of Transportation or Road Master. The Savannah shops were still under the Master of Machinery and the Master Car Builder, but these Masters were now given responsibility for all shop work at Savannah, Macon, and Augusta. 26 The orders of the Masters were carried out by foremen at the shops.

THE CIVIL WAR AND THE CENTRAL RAILROAD

The Civil War had a pernicious effect on the Central of Georgia Railroad. Most of the track from Macon to Savannah was destroyed by Sherman's men and numerous railroad structures were demolished. The Savannah shops, were spared any harm, but the motive power and rolling stock were not so fortunate. Direct enemy destruction of rolling stock and locomotives was minimal. (four locomotives were burned). The Confederate forces exerted a more pernicious effect on equipment by ordering the old engines at Savannah broken up when that city was evacuated, and by ^mcom^Amandeering locomotives and rolling stock - the latter were never fully recovered. The heaviest fall taken by wartime service was deterioration. Equipment was abused for the duration of the conflict - new parts and replacement parts were not available. The average number of locomotives in shop from 1856 to 1861 was three; in 1863, there were four locomotives in shop and twelve awaiting repairs. 27 Motive power decreased from 59 in 1861 to 49 in 1866. 28

Rolling stock decreased from 729 in 1860 to 537 in 1866.³⁰ The war dealt a heavy blow to Company equipment.

Despite these wartime losses, the post-war president, William M. Wadley rapidly restored the road to financial security. The major capital asset of the road - the ^{road}bed itself - was not destroyed by Sherman. The road was rebuilt as soon as iron was available. The equipment was renewed in busy shops that could finally obtain needed supplies. All was not sanguine, however. Inflation after the war sent equipment prices skyrocketting. A locomotive that would have cost \$9,000 before the war cost \$14,700 after, and \$800 to place on the rails - a price increase of 70%.³¹

Labor costs also escalated to meet the level of inflation. Despite the war time inflation - officers' salaries were cut during the war - in 1860, the President got \$7,500 per year, W. Burns, Master Machinist, got \$2,000 and C. C. Miller, Master Carpenter, received \$1,800. By June 1865 these figures had shrunk to \$4,000, \$1,608, and \$1,900 respectively (but in October, Burns was restored to \$2,000 and Miller raised to \$1,900).³²

Master of Machinery, Boulineau, faced a severe test of his abilities as soon as he took office. When he entered his duties in February of 1866, there were only 14 serviceable locomotives; 35 engines were useless until repaired. On 1 December, 1866, Boulineau had 42 engines running.³³ Many locomotives were extensively repaired that year; two engines with 60" drivers received new 54" wheels, this increasing their load capacity. By 1867, 48 engines were serviceable and only two engines awaited rebuilding (three engines were sold that year and four were bought). The postwar expenditures for maintenance of Machinery and Motive Power were up markedly. In 1862, \$110,312³⁴ were spent in this department; in 1866 \$241,812.09³⁵

and in 1867 - \$372,622.43. ³⁶ Maximum yearly expenditure before the war had been \$227,916 in 1860. ³⁷

LOCOMOTIVE MAINTENANCE AND BUILDING AT THE SAVANNAH SHOPS

The mid-nineteenth Century locomotives of the Central Railroad were typically American. They were virtually all 4-4-0 machines with a swivel bogie truck and two pairs of connected drivers. Central locomotives were wood-burners until the 1880's. The rich timber resources of the Southeast made wood the logical fuel, and Georgia pine was ideal for rapid steam-raising. The main difference between passenger and locomotive engines on the Central was wheel size. Four and a half foot drivers were preferred for freight and five foot drivers were used for passenger locomotives. Given equal boilers and cylinders, the different wheel size changed the power and speed of the locomotive. The passenger locomotives were faster but less powerful.

Locomotive maintenance was concerned with: 1. the boiler and 2. the mechanical parts. The most critical and expensive part of the locomotive was the boiler with its hundreds of feet of copper flues through which hot gasses from the fire box were drawn toward the stack. This "fire-tube" boiler was a very efficient way to transfer heat from the fire to the water surrounding the flues until, however, the flues became encrusted with minerals from the water. This encrustation - or worse - corrosion of the flues required periodic boiler maintenance - encrusted flues had to be cleaned and corroded ones removed.

The mechanical parts of the locomotive were subject to wear and failure - and the nascent science of metallurgy found all sorts of interesting problems embodied in the railroad locomotive (and in the track, and super-

structure). Broken piston rods, crank and pins, connecting rods, and axles caused alarming derailments and accidents.

Maintenance of the moving parts of the locomotive required precision machine tools. The wheels had to be turned on huge lathes to eliminate the "flat spots" that sometimes developed. The cylinders had to be bored and the pistons turned precisely with the rings periodically renewed. The axles and journals were both precision-machined to fit each other smoothly. The machine shop at Savannah was equipped to carry out these operations.

The forgings mentioned above were the province of the blacksmith shop. Iron parts were heated in forges ranged along the walls and worked by the blows of a steam hammer of 20,000 pound capacity. The only metal work not done at the Savannah shops was iron casting. Castings for wheels and other hardware were obtained from a local foundry. The castings were then forged in the blacksmith's shop and machined to size in the machine shop. Even before the 1850's shops were completed, the company was successfully fitting their own wheels and axles.

The new Savannah shops had many advantages over the previous shops - not only could the Central perform extensive locomotive repairs more efficiently - the shops were also completely equipped for producing locomotives. The first locomotive built entirely within the Company shops was a freight locomotive dubbed the "William M. Wadley" in honor of the Central's Superintendent. The Wadley was an light wheel (4-4-0) locomotive - the "American type" - with 48" drivers and link motion valves. ³⁸ It was completed in 1857 and was described by

the Superintendent as "a highly creditable specimen of the skill and intelligence of the Company's employees, and will suffer nothing by comparison with the best engines in its service." ³⁹ The Wadley was a respectable sized engine with 14 by 24" cylinders. This cylinder displacement was not increased among Central engines for 22 years (with one exception - the Andrew Low - built by Central Railroad in 1863 with 14 by 25" cylinders.) The Company was so well pleased with the performance of the Wadley, they decided to build another engine in 1858 and by 1859, they had finished two locomotives - the Courier, a light dispatch engine which cost \$3,188.81, ⁴⁰ and the Emerson Foote, a large first class freight engine which cost \$11,341.21 ⁴¹ including labor and materials. The Foote and the Wadley were probably the first Central engines with 14 by 24" cylinders - earlier models had been furnished with cylinders 13 by 20", 13 by 24", and smaller sizes. Like the Wadley, the Foote was an eight wheel (4-4-0) engine; however, the Foote had 60" drivers and was thus suited to freight and passenger service. Larger cylinders meant that the Foote and the Wadley saw extensive service with the Central. The former logged over 420,000 miles and the latter over 540,000. Both were sold in 1886, when the company was trying to modernize its motive power and 14" and smaller cylinder engines were phased out.

The Courier was an engine with a different history. As a "single driver" engine (having only a single pair of driving wheels) of light weight, it was designed for road inspection or other use by Company officers. It was used for some time as a pay train - carrying the Company payroll. Its annual mileage never exceeded 2,500 miles - it

was little used. The Master Machinist opined the engine was "of little or no value" as an inspection engine, and in 1871 it was converted to a pile driver to extend the railroad to the Savannah River wharves. Presumably, the Company put the engine to better use in its new role.

The Civil War was a major obstacle to locomotive building at the Central Railroad. In the Twenty Seventh Report of the Company in 1861, the Superintendent stated that one of three new engines under construction, the Andrew Low, could be finished in one month.

⁴² The engine was not actually completed until November of 1863. The Low was the same size as the Wadley, except that its cylinders were an inch longer as described above. The delay in its construction gives us some indication how busy the shops must have been. The other two engines under construction were not finished during the war. One of these engines became the Chatham, a light duty locomotive with 13.5 by 24" cylinders, finished in 1870. Here, we see evidence of the work backlog caused by the Civil War. The sister engine to the Chatham was apparently never built - at least not by the Central. The Master of Machinery said that a boiler and castings made for an engine like the Chatham were on hand in 1870. ⁴³ These must have been the parts intended for an engine that was to have been made in 1862. However, the Central never built another 13.5" cylinder engine: the Chatham was the first and last of its class. ⁴⁴

There was a remarkable shift in the Company's policies on locomotive building following the Civil War. The shift in practice seems to coincide with a change in personnel. Following B. L. Boulineau's re-

signation in June 1872, Mr. D. D. Arden was appointed Master Machinist. Under Arden's aegis, the Savannah shop seems to have quit new locomotive construction (See Table 3). Arden enunciated his policy on locomotive rebuilding in 1874.

. . . The Delaware, built in 1852, I consider worn out, and would recommend that she be cut up and another like the New Hampshire built in her place, using such parts of her machinery as are serviceable. The Madison, built in 1853, will require two new cylinders and we will have to overhaul her boiler, and some parts of her machinery will also need repairing. . .

The New Hampshire, of which mention was made in my last report as being rebuilt, was finished and put on the road on the 9th March last, and has given entire satisfaction as a first-class engine. I would recommend the building of at least one like her every year, which would help to keep our stock up to its present demands. We have a number of old engines not specially mentioned, also, that cannot last much longer, and to keep them up they will require more than ordinary repairs. This class of engines will give us good materials to rebuild with. 45

This more conservative policy seems to have been quite shrewd. The cost for a new locomotive such as the Emerson Foote had been over \$11,000 when built in the Central's shop. The cost for a rebuilt locomotive was substantially less; for example, the rebuilding of the Rome and the Savannah in 1881-2 cost the Company \$14,000. Two new engines would probably have cost over \$16,000. This policy away from new construction may be explained by the history of the Central. In the late 1850's, the locomotives wearing out were probably obsolescent machines too small for rebuilding. By the 1870's the Company had a surfeit of old, inefficient locomotives bought in the 1850's. These old locomotives were suitable for rebuilding because the motive power requirements for the road were relatively constant from the 1850's to the 1870's. Referring to Table 3, note the recurrence of

the cylinder size 14 by 24" from 1857 to 1882. In the 1880's locomotives with 14" cylinders began to be phased out in favor of larger machines. There is no indication that these machines were inadequate for the 1870's. The tendency to rebuild from 1878 - 1882 with 54" drivers indicates these engines were intended solely for freight, whereas engines built previously with 60" drivers were fast enough for passenger service but could still haul freight - though not as much as the 54" machines. ⁴⁶

Table 3 only covers locomotives rebuilt or built until 1886. Did the Savannah shops discontinue rebuilding in that year? This issue is problematic - the Annual Reports do not give this information. There were certain trends in the Motive Power Department that would explain a dropping off in major rebuilding in the late 1880's. This Department was trying to phase out its light engines. In 1890, 77 of the railroad's 227 engines were obsolete, having 14 or 15" cylinders. Freight cars were double their weight of two decades previous and light engines were no longer economical. The new engines bought in the 1890's were much larger than could be rebuilt from condemned engines. It would not have been reasonable to rebuild a 4-4-0 engine with 14" cylinders to a 18 by 24" cylinder 2-6-0 (Mogul) or a "Ten-Wheeler". The dramatic increase in the size and weight of Motive Power - and also the sheer increase in number of locomotives on Company branches was to have important consequences for the role of the Savannah shops. The new motive power was too heavy and too numerous to be over hauled at the Savannah Machine Shop. By the turn of the Century, new shops on a scale previously unforeseen

were called for. These shops were not built at Savannah.

OTHER WORK IN SAVANNAH MACHINE SHOP

In addition to building and rebuilding Central locomotives, the Savannah Machine Shop fulfilled other tasks. The rebuilding of the Courier as a pile driver has already been mentioned. Considerable work was done for the Ocean Steamship Company and the Gordon Cotton Press in the 1870's and 80's. In 1880, over \$18,000 worth of work was done for the Steamship Company and the Gordon Press, and in 1881, over \$19,000 of non-railroad work was done.⁴⁷ This was a sizeable investment of labor and material, since a completely rebuilt locomotive cost the company \$7,000.

Evidence of the increased work load of the Savannah Machine Shop was the rebuilding of 1876. Following a number of years of problems with the building (it was too hot and the roof leaked) a second story for lumber storage and a pattern shop and a third story-monitor were added to the building, greatly increasing its working space. But this addition was not enough.

By 1881 the Master Machinist felt that the work load of the Savannah shop was too much. In his report to the Superintendent, he said that the facilities of the Machine Shop at Savannah should be increased or else the Macon Shops enlarged so that all general repairs might be done there and running repairs and Cotton Press and Steamship work done at Savannah.⁴⁸ Since locomotive rebuilding and nonrailroad work continued at Savannah, the Macon Shops

must have taken the general repair work.⁴⁹ We will consider the growth of the Savannah shops vis á vis the Macon shops below.

SAVANNAH CAR SHOP

Railroad rolling stock had developed a standard form by the 1850's that would continue through the century. Unlike the locomotive, which had no clear precedents of design, the railway carriage and burthen car had obvious precedents: the stagecoach and the common horse-drawn wagon. They required little modification to be placed in the rails. Efficient rail transport demanded changes that were soon incorporated, however. The small wagons that were initially used for freight were later used as swivel trucks under larger cars. The burthen car developed a number of standard forms: the platform car, the box car, and the stock car. All were built much more quickly and cheaply than passenger cars. In 1860 a freight car cost about \$470 when built in the Company shops. By 1870, a single first class passenger car built by the Company cost \$9,500.⁵⁰ The passenger cars involved large expenditures for labor - even refurbishing a car cost more than building two or three freight cars. The passenger cars built by the shops weighed up to 50,000 pounds by 1870 - they were placed on two 6-wheel springed trucks. The interior of the car was lavish and ornate, a typical car contained well polished, plush seats, figured ground glass in the upper windows, wood work of exotic woods such as black walnut, mahogany, bird's-eye-maple, and the metal work was silver-plated. The labor

necessary for woodworking, painting, polishing, and plumbing (sa-loons at each end had wash rooms and water closets) can be imagined. The Carpentry Shop, completed in 1853, was able to fill Company needs for rolling stock from 1854 to 1860. The construction of cars in the Central Shops involved various woodworking skills. Wood had to be planed - cut into proper dimensions - drilled, assembled, painted, sanded, etc. Blacksmithing and metal machinery skills were also required to forge shape the wheels, axles, bushings, and other parts of the truck and car.

The Pre-Civil War production of cars at the Savannah shop can be followed in Table 2. Ante-bellum production peaked in 1860 at 25 cars/year. Three hundred and thirty-one cars were built in the shops from 1853 to 1860. In the three years before the carpentry shop was completed, the Company bought 196 cars, but with shop production averaging 41 cars per year to 1860, the company could supply its own needs, buying only two cars from 1854 to 1862.

Post-War production of the Savannah Car Shop was hard to trace. The Annual Reports frequently did not break down the production of cars and car repairs among the various shops of the Railroad. One trend was clear - the traffic of the Central soared in the second half of the 19th Century. There was a tenfold increase in rolling stock from 1866 to 1900. The work load of the Savannah Carpentry Shop spiraled.

THE 1907 PAINT SHOP

The capacity of the Savannah Shops for coach repairs was greatly increased by a new paint coach shop completed in 1907. The new building cost about \$50,000 and increased shop capacity to 30 cars⁵¹ over 10% of the total number of Central passenger coaches at the time of its completion (See Table 4). Coach, Cabinet, and Upholstery work were done in the Old Carpentry Shop in the portion west of the Planing Mill (see Figures 1, 2a, & 2b). The New Paint Shop relieved the overcrowding of the old shop by providing over 40,000 square feet of work space. The useful life of this shop was only 16 years: it was completely destroyed by fire along with the Coach, Cabinet, and Upholstery Shop and a portion of the Planing Mill on November 16, 1923.

SHOP ELECTRIFICATION

In 1907 the power plant that had served the Savannah shops since 1855 was retired. The A. N. Miller engine had required only one major overhaul and the boiler had been repaired once. The new electrical power plant was installed at a cost of \$41,500. It increased the efficiency of the shops by providing A. C. and D. C. power, compressed air and steam from a convenient central location. The plant did not alternating current electricity: this was purchased from Savannah Electric and Power Company more cheaply than it could have been generated at the shops.⁵² Transformers in the Dynamo-Compressor Room (formerly Lumber Storage Room) supplied alternating current for plant lighting and for constant speed induction motors. Steam from the boiler served a

number of functions: it powered the 200 pound steam hammer in the blacksmith shop, ⁵³ it provided steam for heating and cleaning, it drove a steam powered air compressor, and it powered an engine that ran a D. C. generator. ⁵⁴ There was also a motor-generator set producing 205 V. D. C. current, but this was probably added later. D. C. current was needed by the shops to power variable speed motors, used on many of the shop's machine and woodworking tools. Air from the steam-driven compressor was used all over the shops in pneumatic tools.

It is interesting to note that the electrification coincided with the completion of the new paint shop. One of the decid^{er}ata in the decision to electrify the shops may well have been the problem of putting a power shaft from the engine house to the paint shop - a distance of over 500' to the end of the shop.

The electrification of the shops had profound implications for work patterns. Electrical distribution wires made transmission of power via shafting unnecessary. Motors could be placed to serve each machine. Power losses through friction, which were quite heavy in the old shafting system, were avoidable. D. C. motors were used on machinery in the shops where variable speed of operation was encountered. The full basement under the Planing Mill made the installation of motors much easier. Foundations for electric motors were built under the Mill and the planers, saws, sander, and other heavy equipment requiring large motors were belted to individual motors. ⁵⁵ Some lighter machines had individual motors mounted on

the wall above the machine - e.g. the wood lathes in the Planing Mill.

There was some delay before the full benefits of electrification were appreciated in the Machine Shop (and possibly in other shops) where belting and shafts continued to be used until 1923.⁵⁶ This was a transitional state between steam power and full electrification with an individual motor supplied at each machine. One electrical motor was used to run a whole gang of machines, probably transmitting power through the same shafting that had run from the engine room. This was not a good compromise: it saved some energy wasted in friction by eliminating shafting from the engine house, but it retained dangerous overhead belting in the shop. Also, the capacity of a large electric motor was usually wasted since all the machines connected to it were rarely in use at once. (Conversely, if the motor had no excess capacity - it would have been overloaded when all the machines were used.)

The nuisance of the old belt and shaft drive system was abolished when 12 new machines with integral motors were installed in 1923. The new machines could be operated by fewer men.

The banishing of drive shafts and belts was only one facet of the changes brought by electrification. The electric motor solved all sorts of problems in efficient handling of materials and equipment. The increased weight of locomotive engines made it necessary to install a gasoline engine on the roundhouse turntable in 1903. In 1906 the turntable was replaced (and probably enlarged).⁵⁷ In 1911, the

turntable was finally electrified at a cost of \$2,327.26 for the two tractor motors, gearing, and controller.⁵⁸ The advantages of the electric motor over its gasoline predecessor were obvious: maintenance was lower, it was more reliable and it was more convenient to use.

Passenger coaches weighing on the order of 70 tons also posed a transfer problem, at least partially solved by the electric motor. The Coach and Paint Shop were served by a transfer table which was electrified by the 1920's.⁵⁹ The transfer table was invaluable to maximum utilization of shop land. It allowed cars entering by a single track access to 26 tracks entering the Lumber Yard, Paint Shop, Coach Shop, Coach Stripping Tracks and Planing Mill.

The transfer table ran along a set of five tracks transverse to the tracks it served. (A motor of only 10 hp. may have been used to power this device.)⁵⁰ The transfer table allowed the lumber storage area and store house to stand between the entrance tracks and shop tracks without interfering with access of coaches, wheels or cars to the shops. An electrified transfer table was the most convenient to operate.

Other uses of electric motors which transformed and facilitated shop operation were the various electric cranes, hoists, and elevators used at the shops. A six-ton mono-rail electric hoist was used in the 1925 Coach Shop to transport coach trucks about the shops. (See Section on 1925 Coach and Paint Shop) A similar mono-rail hoist was probably used in the Machine Shop to handle locomotive driving wheels

about the wheel lathe.⁶¹ A locomotive crane, probably in the Machine Shop, was equipped with an electro-magnet in 1910.⁶²

To remove driving wheels from locomotives or wheels from coaches or car trucks, special "elevators" called drop pits were used. Electric motors provided the power for this operation. The 1926 roundhouse included a Whiting Drop Pit of 50 ton capacity.

The Drop Table was a section of track about 10' long on a platform supported by four large screws. The driving wheels of a steam locomotive (which were very heavy) were lowered on this platform, the platform was shifted to the next set of tracks, and raised.⁶³ Then the drivers could be rolled onto the turntable and sent directly into the machine shop without being lifted manually. The wheels of passenger coaches were removed on a similar but smaller wheel pit which ran under three of the stripping tracks between the Coach Shop and the Planing Mill.

There were three electric elevators in the shops - two in the 1925 Paint Shop and one in the Machine Shop, serving the 2nd floor Pattern Shop.

Another ingenious use of electric motors, for material transfer was found in the Planing Mill, where a large blower motor powered the exhaust ducting system for wood chips from the saws, planer, and sanders. These chips were ducted directly to a storage bin next to the boiler room, where they were burned to raise steam. A similar exhaust ducting system for wood chips was used in the Pattern Room above the Machine Shop.⁶⁴

Electricity was also useful to the shops in forms other than

Motive Power. Electric lighting was probably introduced with the 1907 electrification.⁶⁵ Judging by light levels in the buildings today, this must have been a major factor in increasing worker efficiency. Electricity also served to power electric arc-welding units; there were outlets at each stall of the round house for arc-welding. Arc-welding was a valuable repair technique which saved the railroads millions by repairing defective castings, forgings, boiler plate, areas to be machined, etc.

THE SAVANNAH SHOPS IN THE 1920'S

The Savannah Shops were thriving in the 1920's. These years saw a New Coach and Paint Shop, a new Roundhouse, and a new storehouse built at the site. The number of locomotives on the Central reached its all-time high - 349 - in 1925, and the number of locomotive revenue miles also peaked in that year. (See Table 7) Equally important for the Savannah shops, the only passenger coach shops on the railroad, the number of passenger cars peaked in 1920 at 298 and remained at 292 in 1925. Six hundred and thirty-one men were employed at the Shops in 1923 with monthly wages of \$70,000.⁶⁶

Locomotives serving 500 miles of Central system track were shopped in Savannah (but the heavy power was shopped at the new Macon facilities). The Savannah Machine Shop was equipped for any repair work on these locomotives. Six engines were replaced and sent out monthly. The stark glare of the oxy-acetylene torch and the electric arc-welder constantly played on the 34 stalls of the roundhouse.⁶⁷ The erecting department of the roundhouse was equipped to

lift locomotive bodies from the wheels, and the Drop Pit removal counter-balanced drivers for easy repair.

The shops were well equipped for metal working. The seven forges of the blacksmith shop kept the 200 pound steam hammer busy.⁶⁸ The Copper Shop produced babbit metal for the engine system. The brass foundry cast shoes and wedges used for locomotive and car bearings. Iron and steel castings were not done at the Savannah Shops, but the Pattern Shop kept a library of thousands of wooden patterns that could be used by local foundries to cast any part needed for locomotives, shop equipment, coaches, or freight cars.⁶⁹ All metals produced or used at the Shops were tested by the Test Department, which was located in the 2nd story above the Airbrake Shop. The Engineer of Tests was also responsible for controlling the quality of Company supplies, from air brake hose to locomotive oil.

The Electrical Department at Savannah had two shop rooms, one for passenger coaches in the Passenger Depot and one between the Planing Mill and the Compressor-Dynamo Room. This department had the responsibility for keeping the electrical equipment of the shops in good order. They rebuilt storage batteries, cleaned dynamos, repaired motors, etc.⁷⁰

The Storehouse at Savannah was critical to the smooth functioning of shop repair work. Stores of about half a million dollars worth of parts, equipment, and supplies were kept at Savannah:⁷¹ everything from stationery to locomotive parts had to be immediately available. A new brick and concrete Storehouse was built in 1925 adjacent to the

Planing Mill. It was well equipped for efficient flow of materials with concrete ramps and platforms for moving material on electric trucks and direct unloading from freight cars. Casting bins were provided in front of the building. The interior of the Storehouse resembled a large grocery store with rows of white shelves and towering stacks of supplies. ⁷²

The Planing Mill at the Shops used 175,000' of pine and hardwood lumber per month. ⁷³ It prepared rough lumber for use in passenger and box car rebuilding. Freight cars were repaired at the freight car repair tracks which had a capacity of 65 "bad order" cars. A freight car repair shed 32' by 309' was erected in 1925 to serve the repair tracks. ⁷⁴ Passenger Coach Repairs were done in the Carpentry Shop, Plumbing, Cabinet, and Coach Departments. Twenty-two cars per month were painted in the Paint Shop. All these Passenger, coach, paint, and repair facilities were lost in the fire of November 16, 1923. ⁷⁵ Rebuilding was begun immediately.

THE 1925 COACH AND PAINT SHOP

The 1923 fire caused a loss in buildings, machinery, and passenger equipment of over half a million dollars. The new shops built as replacement were of fire-resistant brick and steel construction. The Paint Shop was a two story building on the corner of Jones and West Boundry Streets, 226' by 210', and the adjoining Coach Shop was 210' by 70'. They were well arranged for convenience of work and transfer of materials. Stripping, painting, and refitting was done on the ground level, with direct access of coaches via a transfer table in front of the shops. The basement level contained Cabinet, Upholstery, Electrical and Sheet Metal Departments, paint storage, stationery, supply and Painting room, and locker-lavatory facilities for the workmen. There were many interesting features of this building to facilitate Coach painting and repair. A 6-Ton overhead mono-rail electric crane was used for handling coach trucks. Work was carried to and from the departments on the basement level via two 5-Ton automatic elevators with 6' by 12' platforms. Painting was made easier and safer by the powerful ventilation system and the counter-weighted scaffolds which could be easily raised or lowered and locked in place. Metal work was aided by a piping system that carried acetylene to outlets in all parts of the shop. 76

POSTSCRIPT: THE DECLINE OF THE SAVANNAH SHOPS

The 1930's were bad years for the Central Railroad. The Company went into receivership in 1932, when it defaulted interest due to securities. Almost wholesale dismissal of workers in its shops and

offices followed and those who remained received salary cuts. ⁷⁷

Table 7 gives some indication of Company business in this century.

Note that equipment maintenance expenditures for 1935 were but half those for 1920. This gives some idea of the reduction in shop budget.

The 1940's saw an upswing in Company business: shop budgets increased, as did locomotive mileage and the number of cars. Savannah remained active as the shopping point for passenger coaches until 1963.

Locomotive repairs at Savannah declined dramatically after the late 1940's. Dieselization of the Central was begun in the 1940's and completed by 1953. One hundred and thirty diesel electric locomotives fulfilled motive power needs in 1955. The Savannah shops were not equipped for diesel repairs: these were done at the Macon shops, the main shopping point for the whole system. After 1952, with steam locomotives banished from the road, the Savannah brass foundry, boiler shop, machine shop, pattern shop, and blacksmith shop were almost superfluous. There was little need for these shops when locomotive repairs were no longer done. The shop force was ⁷⁸ cut accordingly and heavy machinery was moved to Macon.

The final blow to the shops was the purchase of the Central by Southern Railway in 1963. The "mechanical forces" of the two railroads had been "combined" by the time of the official takeover-- 18 June, 1963. Within 24 hours of the takeover, 200 Savannah employees of the Central including many in the Mechanical Department ⁷⁹ were fired. The Savannah shops were closed.

CONCLUSION

Although the Savannah shops were busy in the 1920's, the Central's shop focus had already switched to Macon. Electrification had a profound impact in transforming work patterns in the Savannah shops. The railroad shops may have been slow to electrify, but they illustrate the typical integration of electricity into the "American System of Manufacture." This latter concept included rationalized work flow and efficient production techniques that increased the skill and power incorporated in machines to reduce labor costs. The Savannah shops could not have realized the full potential of shop electrification, however, since the design of the shops was inappropriate for newer production techniques. Electrification made it possible to design "mass production" shops on a scale previously unforeseen. The Macon shops, constructed from 1908 - 1910 at a cost of 1.6 million dollars, were the showplace of the Central Railway shops. The key to the efficient transfer of materials and equipment at these shops--and their most spectacular feature--was the complete system of travelling electric cranes. The largest of these was a 120 ton travelling electric crane (manufactured by the Niles Company) in the erecting and boiler shops that transferred whole locomotives and boilers from one end of the shop to another without interfering with the intervening locomotive repair work.

Other electric cranes were strategically located in shops to expedite material transfer. The Macon shops represented the adoption by the railroads of mass production techniques predicated on electrification.

FOOTNOTES

- ¹ Thomas P. Hughes, "A Technological Frontier: The Railway," in Bruce Mazlish (editor) The Railroad and the Space Program: An Exploration in Historical Analogy, (Cambridge: M. I. T. Press, 1965) p. 70.
- ² Ulrich B. Phillips, A History of Transportation in the Eastern Cotton Belt to 1860, (New York: Columbia University Press, 1908) The introduction and Chapter One discuss this issue. (Hereafter cited as HTC).
- ³ HTC, p. 17.
- ⁴ HTC, p. 17.
- ⁵ Jefferson Max Dixon, An Abstract of the Central Railroad, 1833 - 1892, (Doctoral Dissertation, Graduate School of Education, George Peabody College for Teachers, 1953), p. 33 (Hereafter cited as Abstract).
- ⁶ Abstract, p. 78; The 191 miles were completed 13 October 1843. It had taken 10 years to build and cost \$2,581,273.
- ⁷ Central Railroad and Banking Company, Reports of the Presidents, Engineers in Chief and Superintendents of the Railroad and Banking Company of Georgia from I-19 Inclusive. (Savannah: John M. Cooper and Company, 1854), (First Report) p. 19 (Hereafter cited by report number and date).
- ⁸ Second Report, (October, 1838), p. 30.
- ⁹ Fifth Report, (May, 1840), p. 54.
- ¹⁰ Eleventh Report, (December, 1846), p. 152.
- ¹¹ Tenth Report, (April, 1845), p. 115.
- ¹² Fourteenth Report, (December, 1849), p. 211.
- ¹³ Seventeenth Report, (December, 1851), p. 245.
- ¹⁴ Central of Georgia Railway Map Showing Sketch of Lines, Year Built and Mileage. (Office of Chief Engineer, Savannah, May 1911).
- ¹⁵ Twenty First Report, (December, 1855), p. 38 and Table 3.
- ¹⁶ Savannah Daily Morning News (17 July, 1855).

17 The arrangement of shafting can be deduced from the location of the shaft hangers. These may be located by bolts and bolt holes running along the walls of the blacksmith shop, machine shop, and planing mill. The shafting was hung from the roof trusses in the lumber storage room (later the dynamo room).

18 These figures were estimated from an 1852 plan of the Savannah Depot. A blue-line print of this drawing is in the Historical Files at the Office of the Central of Georgia Railway in Savannah.

19 Savannah Daily Morning News, 27 April 1859 .

20 The shaft has been removed, as were the brackets holding it, but the bolts holding those brackets remain. There were 8 brackets on 19' centers down the 160' length of the blacksmith shop. Most of these 8 brackets were supported by plates 36" x 9" with 3 bolts to the wall. level could be gauged by a notch in the blacksmith shop (that is in the hinged upright support of the jib crane). There were 8 more smaller 4-belt brackets on the blacksmith shop with the shaft.



The shaft
jib crane
There were
wall on line

21 Too much of the machine shop has collapsed to decide this. There were no photographs of the shops in the Central of Georgia historical files nor elsewhere.

22 No evidence of shafting was found on the East and West walls of the planing mill, although the West wall was rebuilt following a fire in 1923. However, the electrical motors in the planing mill were placed in the basement and power was transmitted through belts.

23 These chips were an important power source for steam raising. At the Macon Shop power plant built in 1881, three large surface boilers were to generate enough steam for the 60 horse power engine driving all the shop machinery. The only fuel to be used was the shavings from the car shop.

²⁴ Abstract, p. 307.

²⁵ 1867, the Master Machinist was paid \$3,250/year and the Master Car Builder \$3,000/year. Source: Central Railroad and Banking Company Minutes 1859 - 1878, 22 January 1867, p. 225.

²⁶ In June 1872, following Mr. B. L. Boulineau's resignation as Master of Machinery, Mr. D. D. Arden was appointed Master Machinist. The duties of Master Machinist were then changed to limit his supervision to the shops at Savannah and Augusta. (Source: 37th Report, p. 18) This administrative change seems to reflect the increasing importance of the Macon shops, which had been consolidated in 1870 in East Macon. It might have been too large a responsibility to administrate both shops. However, the Master Machinist continued to report the materials on hand at all the shops - Columbus, Macon, Augusta, and Savannah - and these data were given in his report to the Superintendent each year.

One should also note the change in title of the position; from the 1840's until 1866, the position is referred to as Master Machinist or Master Mechanic. However, when Wadley reorganized the administration of the road in 1866, the title was changed to Master of Machinery, calling attention to the responsibility of the Master for all locomotives and machines used by the railroad - even those machines used by the Carpentry or Car-Building Department. The responsibilities of this Master were contracted in 1872, and the title reverted to "Master Machinist".

²⁷ Statements of Locomotives in Annual Reports from Twenty-Third Report to Twenty Ninth Report (1856 - 1863).

²⁸ Thirty First Report (December, 1866), Table: "Names, Character, and Condition of Locomotives on Central Railroad."

- 29 Twenty Sixth Report (December, 1860) Table No. 8.
- 30 Thirty-First Report (December, 1866), p. 338.
- 31 Thirty-First Report (December, 1866), p. 306.
- 32 Company Minute Book 1854 - 1878, pp. 22-3, 66, 130, and 152.
- 33 Thirty-First Report (December, 1866), p. 332.
- 34 Twenty-Eighth Report (December, 1862), p. 228.
- 35 Thirty-First Report (December, 1866) Table: Railroad Expenditures in Detail.
- 36 Thirty-Second Report (December, 1867) Table: Railroad Expenditures in Detail.
- 37 Twenty-Sixth Report (December, 1860), p. 170.
- 38 Thirteen of the 17 locomotives the Central bought from 1853 to 1857 were link motion; four were independent cut-off and one was variable cut-off. Source: Annual Reports.
- 39 Twenty-Third Report (December, 1857), p. 85.
- 40 Twenty Fifth Report (December, 1859), p. 144.
- 41 Ibid. This seems a rather high figure compared with those prices given for 19th Century locomotives in John White, American Locomotives: An Engineering History 1830 - 1880 (Baltimore: Johns Hopkins University Press, pp. 21-2.) It would seem that the management of the Central thought the experience gained by their mechanics in assembling a locomotive worth a premium.
- 42 Twenty Seventh Report (December, 1861), p. 203.
- 43 Thirty-Fifth Report (December, 1870), p. 40.
- 44 The Central did buy 13.5 cylinder locomotives until 1860, however.
- 45 Thirty-Ninth Report (December, 1874), pp. 51-2.

- 46 Thirty-First Report (December, 1866), p.333.
- 47 Forty-Fifth Report (December, 1880), p. 50; Forty-Seventh Report (December, 1882), p. 78.
- 48 Forty-Sixth Report (December, 1881), p. 58.
- 49 Data given in the Annual Reports does not allow the work load of the Macon and Savannah shops to be clearly separated.
- 50 Savannah Morning News 14 June 1869.
- 51 Twelfth Annual Report (June, 1907), p. 9.
- 52 Savannah Morning News 7 September 1923.
- 53 Ibid. One wonders whether the 1855 article in the Savannah Morning News (hereafter SMN) 27 April 1859 was accurate in describing the steam hammer as a 20,000 pounder.
- 54 This account is pieced together from information in the article cited in 51 above and from interviews with Mr. Gillis.
- 55 Interviews with Mr. Gillis, a former employee of the Savannah shops and now a foreman at the Southern Railway's Dillard Yard, Savannah, provided valuable information about the machines used in the shops in the 1950's.
- 56 SMN 7 September 1923.
- 57 Eleventh Annual Report (June, 1906), p. 13. It cost \$2,444.64.
- 58 Sixteenth Annual Report (June, 1911), p. 11. "
- 59 A 1923 picture of the old Storehouse shows the transfer table with its controller housed by a cab.
- 60 A. I. Totten, "The Evolution of the Railroad Shop," General Electric Review 12 (September, 1914), p. 929.
- 61 The track for such a hoist was shown on a 1929 plan of the Machine Shop in the Central of Georgia vault at the Red Building in Savannah. (Print #97-2/13690) A copy of this print is in the H. A. E. R. office in Washington, D. C.
- 62 The new electro-magnet cost \$1,146.69. Fifteenth Annual Report (June, 1910), p. 12.
- 63 The Drop Table itself rested on two curved trucks running the length of the pit - about 50'. The Pit served three tracks The Drop Table motor was 1015 R.P.M., 17 hp. KTE 502 Frame, Specifications from

a plan #35-0 in Central of Georgia vaults.

64 There was a smoke tunnel running down the center of the blacksmith shop; this tunnel lead to the main smoke tunnel from the boiler room to the stack. Forge fires on both sides of the blacksmith shop were drawn into this central tunnel. (Source: Interview with Mr. Gillis)

65 The Shops were not lighted electrically in 1899. The railroad seems to have been retarded in this respect. The Right Way Magazine (August 1929), p. 15.

66 SMN 7 September 1923. This was an excellent article, much more helpful than the railroad's own publication, The Right Way Magazine.

67 There were also two tracks leading into the turntable and one track leading into the Machine Shop. There was an outlet for oxy-acetylene and for electric arc-welding at each roundhouse stall. SMN 7 September 1923.

68 This was later replaced by a compressed air hammer and two of the forges were retired by the 1950's. (Source: Interview with Mr. Gillis)

69 Central of Georgia Magazine (December, 1949), p. 4.

70 SMN 7 September 1923.

71 Ibid.

72 "Our Modern Storehouse at Savannah," The Right Way Magazine (April, 1925), p. 14.

73 SMN 7 September 1923.

74 Thirtieth Annual Report (June 1926), p. 10. It was constructed with salvage from the temporary paint shop.

75 The Right Way Magazine (December, 1925), pp. 4-5.

76 Two articles were used for this description: L. M. Jordon, "The Central of Georgia's Passenger Coach Repair Shops," The Railroad Herald 34 (February, 1930), pp. 20-23. and G. A. Belden, "The New Coach and Paint Shop at Savannah," The Right Way Magazine (May, 1925), pp. 24-26.

77 SMN 20 December 1932.

78 Valuable information on the shops phase-out was obtained from interviews with Mr. Bill Leavengood and Mr. W. W. Ingram, both formerly employed by the Central.

79 SMN 18 and 19 June 1963.

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very little about the shops.

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One of seven letterbooks in this collection contains material
relevant to Central shop history. This letterbook, 1878 - 1886
contains correspondence relating to Raoul's railroad patents,
including: (1) a device for coupling airbrakes in mixed trains
including cars without air brakes, (2) an oil box for railway
cars, and (3) a gainer or "dado" machine probably used in car-
building. The scrapbooks also contained a newspaper article des-
cribing the Macon shops c. 1880. The collection was largely con-
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This collection included letters from Rike's brother Emanuel,
who worked in railroad shops and sometimes discussed his
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ACKNOWLEDGEMENTS

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TABLE 1

LOCOMOTIVES

EXPEND. FOR MA
MACHINERY AND
MOTIVE POWERTOTAL
LOCOM.
MILES

YEAR	TOTAL NO. OF LOCOMOTIVES	BUILT AT SAV. SHOPS	LOCOS. BOUGHT	REPAIRED OR IN SHOP	EXPEND. FOR MA MACHINERY AND MOTIVE POWER	TOTAL LOCOM. MILES
1845	16			1	\$54,461	
1847	20		4	4	61,835	
1848					68,313	
1849	24				94,466	
1850	30		6		115,722*	
1851	35 (+3 in Dec.)		5		89,751	
1852	46		8	4	123,634	
1853	45		4		108,707	
1854	50		6	5	127,227	621,141
1855	55		6	8	171,221	1,152,304
1856	56		2	5	179,343	736,836
1857	55	1	0	4	152,179	678,956
1858	52		0	3	55,905 ^m	714,817
1859	54	2	0	4	156,066 ⁿ	790,036
1860	59	1	4	4	227,916	879,468
1861	55	-	-	-	142,861	706,286
1862	58	-	f.	16	110,312	630,129

*Salary of Superintendent no longer Inc. from now on.

nLabor and Materials, same pre 58 - except
Salary Master Mach. not itemized - then on.

Source: Central Railroad & Banking Co.,

Annual Reports.

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f. S locomotives leased from

TABLE 2

TOTAL RAILROAD
EXPENDITURES

CARS

YEAR	TOTAL NO. OF CARS	CARS BUILT	CARS BOUGHT	EXPENDITURE FOR MAINTENANCE OR CARS	TOTAL RAILROAD EXPENDITURES
1845	150			\$ 8,573	\$186,886
1847	200		39	10,930	212,468
1848	249	5		26,273	266,450
1849	246	20	2	32,940	337,629
1850	285	^a 56		29,583*	362,890
1851	315	28	2	38,872 ⁺	341,410
1852	449	61	91	50,598	437,883
1853	597	52	103	39,310	407,734
1854	617	33	2	34,796	475,267
1855	666	65	0	57,758	689,029
1856	668	29	0	48,123	647,014
1857	633	^b 1	0	59,689	580,335
1858	661	42	0	41,481	598,107
1859	666	24	-	92,200	794,343
1860	731	85	-	109,534	950,450
1861	708	3	-	51,860	642,032
1862	729	0	f.	28,968	519,964

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* Salary of Superintendent no longer included
 + Includes expense of new cars.
 a 34 of these were not replacements and were charged to Capital expense
 b. 36 shantee cars - portable huts for repair crews - also built
 f. 66 cars leased from Augusta and Savannah RR.

TABLE 3

CENTRAL RAILROAD AND BANKING COMPANY
LOCOMOTIVES BUILT IN SAVANNAH SHOP*

Year on road	NAME	IF Rebuilt	REBUILT		SERVICE Passenger Freight/ Mixed	Other Switching	CYLINDERS		DRIVERS	
			Originally Placed on Road	Builder ⁺			Diameter	Stroke	Number	Diameter
857	n. M. Wadley				X		14"	24"	4	54"
859	ourier					X	-	-	2	48
	erson Foote				X		14	24	4	60
860	omas Purse				X		14	24	4	60
863	ndrew Low				X		14	25	4	60
870	hatham				X		13½	24	4	60
873	tlanta	R	1855	B	X		14	20	4	60
874	ew Hampshire	R	1854	B	X		14	24	4	57
875	adison	R	1853	R	X		-	-	4	60*
	irefly	R	1850	R	X		-	-	4	60*
876	elaware	R	1852	B	X		14	24	4	54
877	esuvius	?				X	14	22	4	48
878	outh Carolina	R	1852	B	X		14	24	4	54
879	ew Jersey	? ^a			X		14	24	4	54
880	in ^o nia	R	1851	B	X		14	24	4	54
881	enry McAlpin	R	1852	R	X		14	24	4	54
	avannah	R	1854	R	X		14	24	4	54

TABLE 3 (Cont.)

1882									
Rome	? ^b			X	14	24	4	54	
Ty	? ^c			X	14	24	4	54	
1883									
Pennsylvania	R	1854	B	X	16	24	4	68	
Connecticut	R	1854	N	X	16	24	4	57	
1884									
#133	? ^d			X	16	24	4	63	
#134	?			X	16	24	4	63	
1886									
#149	?			X	16	24	4	63	

* Her original drivers were of these dimensions

^a The New Jersey may have been built with parts from the Waynesboro, built in 1853 by Norris Brothers. The Waynesboro had 4 60" drivers and was cut up in 1878.

^b This engine was possibly a reincarnation of the Missouri, condemned the same year. The Missouri was a Baldwin locomotive put on the road in 1855 (4 54" drivers).

^c Like the Rome, the Tybee was a new name, but perhaps a reconstruction.

^d Identification of the old engines used for rebuilding became difficult for 1884 and later years when names of locomotives were no longer given-- numbers were used instead.

* The letter code is as follows: B = Baldwin and Company , R = Rogers, Ketchum and Grosvenor, and N = Norris Brothers

* The sources for these data were the Statements of Locomotives prepared by the Master Machinist and appended to each of the Annual Reports.

TABLE 4.

CENTRAL RAILROAD/CENTRAL OF GEORGIA RAILWAY

STATISTICS FOR ROLLING STOCK AND MOTIVE POWER 1863 - 1905

YEAR	TOTAL NO. LOCOMOTIVES	ROLLING STOCK- PASSENGER MAIL	OTHER (FREIGHT)	LOCOMOTIVE MILEAGE (X 10 ³)	EXPENDITURES- MAINTENANCE MACHINERY/ MOTIVE POWER (X 10 ³)	MAINTENANCE OF CARS (X 10 ³)
863	55	65	625	716	253	93
866	49	66	471	429	241	112
870	107 ^g	74	776	1018	617	367
875	115	130	1546	941	472	137
880	124 ^h	130	1640	1079	414	211
885	168	147 ^b	2204 ^b	1397	640 ^f	272
890	227	193	4699	1409 ^d	535 ^e	4
895	211 ^a	178 ^a	5065 ^a		925	236
900	198	203	5238		973	358
905	253	229	8153		1992	948

1896.

1887.

Total Locomotive mileage including South Western Division, Atlanta Division, Savannah and Western Division = 4,438,000 miles.

Expences for "Equipment."

Includes \$112,000 for new Locomotives.

Includes Locomotives for Southwestern Railroad for 1870 and for Macon and Western Railroad for 1871.

Includes the 1881 figure for Atlanta Division Engines.

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(KEY ON FOLLOWING PAGE)

KEY
TO TABLE 4

This table shows the growth in the rolling stock and motive power of the Central Railroad/Central of Georgia Railway (name was changed to the latter in 1895). The locomotive numbers for 1863 and 1866 do not include engines for the Southwestern and for the Macon and Western Railroads. Expenditure for Maintenance of Machinery and Motive Power includes: engineers and firemen's salaries, other salaries and labor, material, oil and tallow, tools and machinery, fuel and water.

Locomotive mileage figures are for Savannah Division only. Total locomotive mileage of all divisions would have been double to triple the mileage shown for most years - see note ^e.

MATERIAL ON HAND FOR MACHINERY DEPARTMENT AND FOR CAR-BUILDING DEPARTMENT

YEAR	CAR BUILDING (X 10 ³)			MOTIVE POWER/MACHINERY (X 10 ³)		
	SAVANNAH		AUGUSTA	SAVANNAH		AUGUSTA
	COLUMBUS	MAGON	COLUMBUS	MACON	COLUMBUS	
1866	70	3	4	17	.6	2
1870	46	.7	3	23	1	2
1875	41	.7	10	13	1	20
1880	18	.3	11	4	.6	15
1882	14	.4	14	10	.7	19

KEY

This table gives the Master Machinist's and Master Car Builder's estimates for the value of materials on hand to be used. Materials for scrap are not included.

TABLE NUMBER 6
LOCOMOTIVE STATISTICS 1895 - 1913

Fiscal Year til June 30	Ton Miles X 100	Central of Georgia Railway		Cents/mile
		MILEAGE X 10 ⁶ Passenger TOTAL	Repair Expenses X 10 ³	
1895	299	1.64	3.61	
1896	320	1.59	3.53	
1897	343	1.49	4.48	
1898	379	1.52	4.95	2.8
1899	416	1.63	5.32	2.7
1900	443	1.93	5.64	3.2
1901	531	2.13	6.34	3.3
1902	556	2.54	7.11	3.8
1903	712	2.76	7.91	3.4
1904	688	2.76	7.70	3.5
1905	741	2.87	7.78	4.3
1906	874	2.93	8.55	4.5
1907	957	3.12	9.41	6.2
1908	849	2.78	7.81	8.5
1909	828	2.50	7.39*	9.2
1910	910	3.24	7.79	7.6
1911	945	3.36	7.79	8.8
1912	1,014	3.60	8.33	9.3
1913	1,051	3.72	8.20	9.9

* Hereafter total revenue service miles. All figures from Annual Reports.

TABLE 7 CENTRAL OF GEORGIA RAILWAY EQUIPMENT 1900 - 1955

Year	LOCOMOTIVES		CARS		EXPENDITURES for Equipment ₃ Maintenance X 10 ⁶
	Number	Revenue Miles X 10 ⁶	Freight	Passenger	
1900	198	5.64	5,238	203	606
1905	253	7.78	8,153	229	1,744
1910	312	7.79	10,224	246	2,036
1915	300	6.20	10,220	272	2,247
1920	299	6.67	8,841	298	6,164
1925	349	8.59	8,831	292	5,191
1930	329	6.71	9,966	248	3,505
1935	246	4.91	7,201	165	3,093
1940	241	5.44	7,754	158	3,333
1945	243 [*]	6.56	9,314	176	4,538
1950	221 [#]	5.63	8,126	184	6,321
1955	130 [@]	3.63	8,131	143	5,423

* Including 20 diesel-electrics.

Including 56 diesel-electrics.

@ All diesel-electrics.

All figures from Annual Reports.

REPORT TO
THE HISTORIC AMERICAN ENGINEERING RECORD
ON THE
CONSTRUCTION OF THE CENTRAL OF GEORGIA RAILROAD
WITH A
DESCRIPTION AND ANALYSIS OF THE EXTANT BUILDINGS
AT THE
SAVANNAH TERMINUS

Submitted on
August 30, 1974

BY
Donald Andrew Grinde, Jr., Ph.D., Assistant Professor of History,
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Building the Central of Georgia Railroad

Introduction

The first railroads of the Southeast, like the Central of Georgia and the South Carolina and Canal Railroad companies, were built to bridge the piney wood flatlands which separates the piedmont and the tidewater sections. Up until the introduction of the railroad, the only communication between the well-settled tidewater region and the cotton producing piedmont, beyond the pine barrens, was by slow and unreliable streams, some wagon roads, and an occasional canal.

The origin of the Central of Georgia Railroad lies in the problem of southeastern planters getting their cotton from the interior to the coast. In the late 1820s, the South Carolina and Canal Railroad Company started to build a railroad line from Charleston to Hamburg, a small community on the northern side of Savannah River, in Augusta. Its purpose was to divert the river trade that had been long enjoyed by the citizens of Savannah, due to its natural location near the mouth of the Savannah River. This threat provided the necessary impetus for the citizens of Savannah to begin their own railroad.

Although the up country planters needed to ship their cotton cheaply and rapidly, they were not the prime sponsors of railroads initially. Piedmont towns, like Macon, approached the initial coming of the railroad with suspicion, fearing this new means of transportation would cause people to bypass these up country market towns. Thus, it was the coastal port, competing for back country traffic, that provided the impulse to build railroads through the pine forests. Subsequently, the piedmont towns would expand and eventually create new towns, such as Atlanta.

Later, Savannah and the Central of Georgia would outstrip the South Carolina Railroad, since Georgia had geographical advantages over South Carolina. It was no mistake that the greatest railroad town of the southeast, Atlanta, was located at the foot of the Appalachian Mountains, making an east-west passage very easy. Other States, from Maine to South Carolina, had to deal with the natural barrier of the Appalachian Mountains, when seeking to build their lines westward. Often, this geographic fact goes unnoticed.

On 20 December 1833, the Central of Georgia was chartered, but it was not until November of 1835, that the first rails were laid, [1] and only then, one hundred feet of rails were laid, in order to keep the charter in force. However, in 1835, the state legislature passed a bill creating the new Central and Railroad Banking Company, making investment prospects look brighter for the infant railroad. With this amended charter and its lucrative banking privileges, work could begin on the line in earnest. [2] On 27 December 1835, the amended charter of the Central was laid before the city council of Savannah, and in February 1836, the city fathers again decided

to open the stock books. By February 12, enough subscriptions were sold to bring the total to 12,308 shares, at \$100 a share. Over a million dollars in capital was now available to the Central and the books were then closed. [3]

Subsequently, on 28 March, the Savannah city council called a meeting of the stockholders. Directors were selected and a permanent company organized. On 5 April, William Washington Gordon, then Mayor of Savannah, was selected as president. He resigned the mayorship immediately. Thirty-nine years old, a lawyer and politician, Gordon had piloted the Central charters through the legislature, and now he was to preside over the construction of the roadbed. [4]

In late summer, 1836, a John W. Randall of Delaware, a competent engineer and "a gentlemen of high standing and great experience in his profession," was engaged to supervise the actual construction. [5] He advocated immediate commencement of the work, but re-surveyed the route and favored the southern route to Macon, because it was shorter and cheaper, costing approximately one-half million dollars to build. However, the directors were in favor of the northern route, since it ran through a more densely populated area. Randall then resigned and L. O. Reynolds took his place. [6]

Although the use of the northern route would be more costly, it had some advantages, in that the lower initial cost of the northern route would create early and much needed confidence. The highly populated Ogeechee district would give the Central a good initial freight business, since the so-called northern route would go through Eatonton and Madison, to tap these newly developed cotton markets. Also, there were some roads and other internal improvements schemes, near the northern route, that might prove to the railroad's advantage later. [7]

The last major policy decision was the question of slave versus white labor, and in March 1837, all the company's white laborers, in direct employment of the company, were dismissed. A system of contracting for work and timber was implemented to placate the planters' interests along the railroad. This contracting-out system would continue until the road was finished. [8]

With the routing and labor problems solved, the directors, president, and chief engineer began to push the construction ahead. The problems of railroad engineering were new, even to the chief engineer. Technicalities like materials and roadbed design had to be worked out. Materials were selected according to their availability. Pine, used for ties and timber, was, of course, chosen, since it could be procured easily along the way. However, timber was not satisfactory in building culverts, stations, and bridges, so as the road reached Milledgeville, quarries of granite in the area made stone culverts and masonry abutments for bridges a possibility. Iron would be used for the rails, since locomotives had already been proven to be the most economical form of motive power. [9]

The superstructure of the Central roadbed was ten by twelve-inch "sleepers," laid eight feet apart, with two six by twelve-inch longitudinal string pieces atop, upon which were placed the mid-section of each three by two-inch ribbons of hard pine. These ribbons were capped with strips of plate or "strap" rail, three inches by three-fourths of an inch thick. [10] Only the ribbon and the rail were not placed in the earth.

With the completion of the first one hundred mills, the falt iron rail, later changed to the "flange" rail, was discontinued. From Midville to Macon, the "edge rail" or inverted T Pattern was introduced, and this allowed the engineers to dispense with the three by two-inch wooden ribbon. The Chief Engineer, L. O. Reynolds, commented, in 1840, that the new rails provided a much smoother ride. [11]

There were also problems involving the right of way and routing. Detailed procedures were drawn up to adjudicate claims arising from acquisition of the right of way. Initially, the negineers spoke of "mercenary motives" of some landowners. [12] However, most of the planters and farmers, who property lay across the railroad, did not charge the railroad for the right of way. Instead, they were happy to have the road nearby and a chance to sell their timber. By 1842, opposition to the railroad was gradually subsiding. [13]

As the railroad was being built, the neighboring towns sought to get spurs built, connecting them with the main line. Macon wanted to start building from the western end, but the engineers decided to proceed entirely from east to west, since rails and equipment were difficult to transport inland. [14] As early as 1839, Waynesboro sought a branch line, and the Central surveyed the route for costs, but it could not turn from the main goal of reaching Macon. Milledgeville also sought to have the main line come through its city limits, but Reynolds declared that the extra twelve miles through broken country would increase costs by \$500,000. He also pointed out that this route would violate the charter, which called for a road to be built over the "shortest, practicable route" from Savannah to Macon. However, Waynesboro and Milledgeville were the first communities to get branch roads, after the completion of the main line. [15]

Other problems were also being solved. In 1836, new legislation was introduced, promising connection with the northwest, when the road reached Macon. By 1839, eight miles of the estimated two bundred miles had been completed, and the remainder was being prepared for track. Although \$1,187,132 of the \$2,300,000 had laready been spent, costs were still running within estimates. [16] The bank was in profitable operation and paid dividends, even in the long period before the railroad itself could begin to produce dividends.

During this time, the railroad had begun operations, and in April 1837, a nine mill strip of road was completed and a Baldwin locomotive was operating on the track. Shortly thereafter, a party of dignitaries took a "ride on the railroad for a few miles from the vicinity of the city." In August of 1837, the first bale of cotton was brought into Savannah. [17]

By mid-1838, trains were running regularly along twenty-six miles of track, and by the end of that year, the trackage had doubled and the amount of cotton hauled was increasing rapidly. [18] In the harvest season of 1839, passenger traffic had reached respectable proportions, and the road was "overrun with freight." [19] The road was finally proving itself to be a great success.

The increase in freight called for more rolling stock. By 1840, the Central of Georgia owned seven engines, five passenger cars, and sixty-seven freight cars. [20] Five of the engines were from the Baldwin Works; two were from the Rogers, Ketchum and Grosvenor works in Paterson, New Jersey. The company had forty-eight general "burthen" cars, nine of which hauled lumber and the rest were platform cars. [21]

One of the main problems encountered in the later stages of the construction of the roadbed was rain. In March of 1840, floods inundated the line for eighty miles, along the flats of the Ogeechee River. The skirts of the road were seriously damaged, but ten days later, the trains were again running regularly. It was at this juncture that the chief engineer decided to plant "Bermuda" grass to hold the soil of the roadbed. [22]

The freshet that followed the next spring, was even more destructive. Some one hundred and twenty-five miles of the road was damaged by waters that swept away small bridges, culverts, and embankments. Traffic was stopped west of the Ogeechee River, for six months. [23] In the spring of 1841, L. O. Reynolds estimated that the rains had caused \$56,000 in damages and had threatened to ruin the road. In 1843, he then stated that the total cost of the 1841 freshet was \$68,000. [24]

The second major problem for the railroad builders was illness among the workers. An epidemic swept the crew, while working on the span between the Oconee River and its surrounding swamps. Plagued with "swamp fever," the men were rendered unfit for work, and no other replacements could be found to work in this contaminated area. For the next two years, until the completion of the road, fever was a constant companion to the construction crew. In fact, just when completion of the line was in sight, W. W. Gordon, who had done more than anyone else to make the Central a reality, succumbed to the fever and died in March 1842. [26] Mr. Reynolds said that the infectious condition of the area was due to the "low ground of Williamson's Creek." [25]

Richard R. Cuyler was Gordon's successor, and, like Gordon, had been associated with the Central, since its inception. He had served on the committee to solicit stock funds, in 1835, and in December 1835, had been appointed by the Mayor of Savannah to a committee of nine, to visit Milledgeville to lobby for charter amendments. He had also served on the commission to supervise the organization of the Central of Georgia in March

and April of 1836. During that time, he was made cashier of the Central Railroad Bank and served at that post until Gordon's death. [27] Therefore, he was quite familiar with the financial problems of the Central, that would beset it in the 1840s.

The Central of Georgia was built in the midst of the Panic of 1837. Just when the construction was beginning, the panic hit. Railroad tickets or vouchers had been issued to relieve the shortage of small specie. [28] The rising cost of labor was also aggravated by the Seminole War in Florida. These unfortunate circumstances were monumental to the directors. They invited the Savannah city council to appoint two persons, who with two directors and a representative from Macon, should look "into the current expenses of the company, with a view to the reduction of them." [29] But in late 1837, when stockholders were requested to pay in their final installments on stock, a severe depression set in, causing work to slacken. [30]

The fall in cotton prices in 1840, combined with freshets, financial panic, and disease, brought the company to the edge of a collapse and work almost came to a standstill. [31] By November of 1841, cotton prices were at starvation levels, and it seemed like it mattered little that the road would be completed. [32] The price of Central stock plummeted to \$20 per share (\$100 being par value). The only positive aspect of the whole situation was that the planters were willing to contract out their slaves and sell their timber very cheaply. [33]

The monetary crunch was so severe, that the method of paying contractors had to be altered. In 1839, two years after the work had begun, contractors were being paid twenty-five percent cash and the remaining seventy-five percent in stock. By 1841, depression, cotton crises, and floods had forced the company to start paying contractors in bonds only, for work west of the Oconee River. [34] Such was the financial condition, when R. R. Cuyler became president.

Cuyler also had a mandate to complete the road to Macon, as soon as possible, so as to obtain a connection with projects in Tennessee. Consequently, the new president made a special offer to two contractors, Rovert Collins and Elam Alexander, to hasten completion. The offer was that if the two contractors would hasten their own work and take over the work of the other contractors, they would be paid at a twenty percent premium rate over the present contract prices. Extra hikes would be forthcoming, if the road could be completed by 1 July 1843. [35]

Although the deadline was not met, on 13 October 1843, the first train steamed to the east bank of the Ocmulgee River, opposite Macon, [36] and a barbeque and reception were held, in which the city and railroad officials toasted the completion of the longest continuous railroad under one management in the world. [37]

In spite of financial and climatic setbacks, the Central of Georgia had reached its goal. Ten years after the citizens meeting, which sent delegates to Milledgeville to secure the first charter, and just seven years after construction had begun, Savannah had finally finished a railroad that would tap the piedmont country of Georgia. Although times were still bad economically, the stockholders remained optimistic. The 191-mile road had been built for only \$2,581,273, only \$281,000 more than the estimated cost. The bonded debt of the Central, upon completion, was \$700,000, and this debt was being paid off, as the bonds matured. The company's credit improved the stock rose to par value, a few months after completion. [36]

Low cotton prices and the collapse of the road north of Macon depressed the earnings of the company, for the next three or four years. But these appeared to be only temporary problems. In general, the road appeared to have a prosperous future in serving the State of Georgia, and later, the South Atlantic community.

The old terminal in Savannah is the only totally extant facility of its 1850 vintage and one of the best ever built. The fact that it was built according to a pre-determined plan also makes it somewhat unique. This terminal is definitely a national historic landmark, because of its completeness. The city of Savannah and the Nation should preserve this area because of its significance in railroad pioneering.

The Central of Georgia and its branch lines have provided a continuing historical function in the general development of the Southeast.

General Lay Out of Central of Georgia, Savannah Terminal

In 1850, the general plans for the railroad facilities at Savannah were drawn up by William Wadley, then Superintendent of the Road and later to become its President. [39] Contemporary sources compared the Central's layout to Boston, Detroit, Pittsburgh, and Baltimore and found the Savannah facility to be among the largest and the best planned for complete service to freight and passenger traffic as well as maintenance. It was said to be superior in its capacity, convenience and elegance. [40]

The Savannah Terminal was located originally upon a property of 35 acres, situated in the southwestern portion of the city of Savannah on West Broad Street. On the northern side of the freight yard is the "up" freight house, built of brick, 800 by 63 feet which adjoins New Street through a long range of wide doors. On the inner side, next to the yard, the freight passes again through doors onto the cars. [41]

At the head of the New Street Warehouse, fronting on West Broad Street, are the general offices of the company known as the "Gray Building." On the south side of the "Gray Building" a large court for carriages stood until 1887, when the "Red Building" was erected. Beyond this court on West

Broad Street is the passenger depot site not to be completed until 1860. On the extreme south side of the freight yard was the down freight house, 325 by 40 feet (not extant). [42]

Through the center of the yard are six parallel tracks, and on each side, near the outer ranges of buildings were three other parallel tracks, in all making over three miles of track in the yard alone in 1855. The outer tracks were for the unloading of cotton; there was room for over 20,000 bales in wooden sheds. All of the tracks were connected by transfer tables or sliding sections, giving every facility for moving entire trains to any point in the yard. [43]

The whole of the freight yard is surrounded by a high brick wall except on the western side. The next division of the station was the motive power department. This is the area bounded by Jones, Railroad, Boundary and West Broad Streets. The principal buildings in the area are ranged on the southern and eastern sides of this yard. They are as follows:

One circular engine house of brick, 250 feet in diameter, and containing 40 stalls or pits, with water pipes on each track for filling tenders. This building has an iron roof, around the circle in which the engines stand, the center being left open. The floor of the building is laid with brick pavement, and the inner cornice and roof rest on cast iron columns. [44]

Adjoining this building on the south side is the machine shop, 160 by 63 feet, lighted with large windows on three sides, besides a lantern in the iron roof. This is certainly one of the finest repair shop rooms in the United States. It is 18 feet deep in the walls, the roof, as those of all the adjoining buildings, is of corrugated iron, with round iron tie rods, and is made by Messrs. A. Whitney & Sons, of the Philadelphia Car Wheel Works. The shafting, - heavy lines being hung on wall hangers, and the counter shafting from the roof, is made by Bancroft & Sellers, of Philadelphia. The work benches are the best we have seen, having a solid hard pine top of 6 inches thickness for their whole width being closed up in front with a sloping woodwork sheathing, like a grocery counter. This prevents the collection of old scrap, dirt and rubbish under the benches. [45] (See Map #1)

On the north east corner of the machine shop, is the copper smith's shop, 76 by 51 feet on its longest sides. In the opposite angle is the Boiler smith's shop, 42 by 58 feet on its longest sides. Adjoining the south east corner of the machine shop is a building of about 75 by 40 feet, 50 by 40 of which form the pattern shop and the rest the general office and store room. [46] (See Map #1)

The Blacksmiths' shop, 160 by 40 feet, forms an L to the machine shop. The forges are closely ranged on both sides. The room is well lighted and ventilated. All the road iron work as well as forging for engines and cars is done here by which it can be inferred how actively this department is employed. In the rear of the Blacksmiths' shop, a long row of vaults is built into the slope of the street, giving convenient and excellent storage for iron, coal, etc. [47] (See map #1)

Next to the blacksmiths' shop is the engine house, of ornamental architecture, and about 60 by 35 feet. The engine room is 40 by 20, the boiler room 40 by 13, and the pattern room which is in the rear, about 35 by 20 feet. [48] (See map #1)

The great chimney stands in the yard, between the engine house and Blacksmith shop. It is 123 feet high. Its design is ornamental and most original. Its form is polygonal, or many sided, giving it the appearance of a fluted circular column. Around the base are projecting buttresses, forming cells between them. These cells have each deep vaults between them, and are appropriated as privies for the men. Upon the top of these cells, or of the buttresses which form them, is a cast iron tank, holding 40,000 gallons. The outsides are panelled richly ornamented. It must be understood that this tank encircles the great chimney shaft. The chimney top is laid up in ornamental brick-work, and is surmounted with a heavy cast-iron cap. This chimney draws smoke from all the blacksmith, coppersmith and boiler shop fires, as well as from the boiler of the stationary engine. The water pumped into the tank goes to supply the tenders. Every stall in the engine-house has a pipe and valve for filling the tenders. [49] (See map #1)

Extending beyond the stationary engine house is a brick shed for storing lumber. This is 83 feet long and reaches to the carpenters' shop beyond. From the front of this shed, a roof is carried out on brick columns for 63 feet, into the yard. This forms a sort of arbor, under which is placed a large Daniel's planing machine, for dressing sills and caps for cars and other similar work. [50] (See map #1)

The carpenters' shop is the last building of the entire range. It forms nearly three sides of a hollow square, its outward faces being respectively, 190, 218, and 140 feet in length. This great shop comprises all machinery, and facilities for building, repairing and painting cars of all kinds. [51] (See map #1)

In 1855, the Central's Savannah Terminal was a striking sight. The buildings were new, and of fine architecture and arrangement, well lighted, well ventilated, and well arranged, and with roofs of iron. They were not put up piecemeal, but put up together to form collectively, a completed and symmetrical whole. The cost of the facility in 1855 was well over \$300,000. When machinery, land, etc. are included the total cost was over \$500,000. The station was described as " . . . beautiful and complete . . . [but] . . . not . . . extravagant." [52]

In 1855 in all the departments of the Savannah station over 550 men were employed with a monthly pay roll of \$20,00. When the establishment became completed the facility employed around 800 men. [53]

PHYSICAL PLANT OF THE CENTRAL OF GEORGIA RAILROAD'S

Savannah Terminus

"Chimney, Tank, and Privies" - Central of Georgia

The large chimney that towers over the terminal facilities of the Central of Georgia is a monument to engineering skill and workmanship. Built in 1855 by Mueller and Schwaab of Savannah, the structure has endured virtually unscathed for well over one hundred years. The firm of Mueller and Schwaab designed the stack as well. [54] Recently, it narrowly escaped the wrecking ball merely to get its Savannah Grey brick.

The brick chimney stands 123 feet high and has a foundation extending 10 feet below the surface of the ground, supported by 120 piles. It is surrounded at its base by a tank 14 feet high with 16 handsomely moulded panels made of cast iron by "Wm. Rose" of Savannah. Gracefully proportioned, the chimney is 24 feet across at its base, and 3 1/2 feet in diameter on the inside at the top. Benjamin F. Armstrong of Savannah was responsible for the masonry work. [55]

Upon completion of the chimney, William Wadley, then Superintendent and later President of the Central of Georgia, Benjamin F. Armstrong and a few others went to the top of the stack before the scaffolding was removed and celebrated the event with a bottle of champagne in 1855. [56] Overlooking the city on top of the chimney must have provided a breathtaking view for the pioneer railroad men.

At the base of the chimney, the brick work is ventilated for structural and thermodynamic purposes. These vents were provided with wooden doors and the workers in the yard used them as privies.

"Machine Shop" - Jones Street

This two story structure was erected in 1855 by Mueller and Schwaab of Savannah. [57] The brickwork is by Benjamin F. Armstrong also of Savannah, Georgia. [58] The gothic castellation around the roof is similar to the motif on the "Cotton Yard" fence. The building was used for repair work mostly.

The building is in an advanced state of decay. The second floor is crumbling and the walls are the only sturdy part of the structure left. The roof is falling down. To say the building is unsafe would be an understatement.

"Blacksmith Shop" - Jones Street

Completed in 1855, the "Blacksmith Shop" or Machine Shop is a one story structure of brick. [59] The arched doorways give it an architectural affinity with the rest of the facility. The building was designed and built by Mueller and Schwaab of Savannah, and the brickwork is by Benjamin F. Armstrong. [60] This is probably the earliest of the buildings in the maintenance area of the Central yard. [see map #2]

The brickwork and the trusswork link it with the buildings immediately adjacent to it. This building has suffered some damage to its walls and the roof is rapidly deteriorating from weather and lack of maintenance.

Central of Georgia Worker's Houses - Jones Street Area

This area developed in the 1840's and 1850's along with the railroad yard. The cottages are of the Cape Cod and Row type. Few survive today, but those that do are in fairly good condition. Most of the wood frame dwellings have burned so the houses that do still stand are stone or brick with a few wood frame buildings left. Essentially, it is an industrial village.

Boilersmith, coopersmith, and Pattern Room with Offices

This is on the north east corner of the "Machine Shop." The Boilersmith's shop is 42 by 58 feet, the coppersmith's shop is 76 by 51 feet, and the adjoining these structures is a building 75 by 40 feet, 50 by 40 of which form the pattern shop with the remainder being used for office space. [61] The masonry is by Benjamin F. Armstrong, and the designer and builder is Mueller and Schwaab of Savannah, Georgia. [62]

The building was considered to be one of the most completed and efficient shops for its vintage. The fact that it was designed and built to support the other repair facilities makes it somewhat unique. The building is rapidly decaying.

"Roundhouse" - Jones Street

Finished in 1853, but modified subsequently to suit the needs of the Central of Georgia, the "roundhouse" is only partially extant. The part that survives has been altered or torn apart. The firm of Mueller and Schwaab designed and built the structure and Benjamin F. Armstrong did the original masonry. [63] In all probability, this building is the most significantly altered structure in the whole facility. Most of the original brick is gone.

The cement and reinforced concrete portions of the "roundhouse" are obviously later additions, but the remains of the iron roof may well be original. [64] The remains of this structure draws its historical merit from association with the rest of the maintenance facilities. As early as 1856, the "roundhouse" was slated for expansion so the building has changed over the years.

Engine house, Boiler room, and Pattern Shop

Built in 1855, this building is adjacent to the Blacksmith Shop. It was constructed by Mueller and Schwaab of Savannah, Georgia. The masonry is by Benjamin F. Armstrong. [65] It has an interesting gothic ornamentation around its roof line. The Engine house is 60 by 35 feet. The Boiler room is 40 by 13, and the pattern room, in the rear is 35 by 20 feet. [66]

This structure is decaying; it is deteriorating from the weather. The building has suffered some structural damage also. It may be torn down in the near future.

Carpenter's Shop, brick shed, and Wash room

This building was finished in 1855, it was built and designed by Mueller and Schwaab of Savannah, Georgia. The masonry was done by Benjamin F. Armstrong. [67] This building is in the southwestern quadrant of the motive department. It forms nearly three sides of a hollow square. The exterior walls being 190, 140 and 218 feet in length, respectively. [68]

The building is still extant, but in some disrepair. A portion of it is being used by a lumber company for storage. With other buildings in this area, it forms a complete complex, perhaps the most complete and unified complex of railroad maintenance shops of the period still extant. This shop contained all facilities and machinery for repairing, building and painting cars.

New Street Freight Warehouse - Behind Gray Building

Erected in 1853, the New Street Warehouse is one of the oldest structures in the yard today. Constructed by Mueller and Schwaab of Savannah, the masonry is probably by Benjamin F. Armstrong. [69] The building is 800 by 63 feet. On New Street this building is entered by a large range of doors through which freight can pass to the cars. The opposite of the New Street entrance (the South side) is where the cars were loaded. [see map #3]

Located behind the Gray building, this warehouse adds to the historical aspects of the Central's Savannah Terminal area. The building is in good shape, and it appears to be safe from destruction. Alternative uses for it are being discussed.

"Produce Freight House" - West Broad Street

Completed in 1859, the "Produce Freight House" was 600 by 38 feet (fifty feet of it being two stories high, for storing provisions, tools, etc., for repairs of the road). [70] The designer and builder was Mueller and Schwabb of Savannah, Georgia. [71] This building is the one of oldest extant warehouse on the property and is tentatively scheduled for demolition by the Southern Railway System.

It is in back of the "Red Building" (233 West Broad Street) which is also supposed to go in the near future. The interior is brick archwork with a "Howe" type trusswork for roof support. The building is of definite historical value when associated with the rest of the buildings in the facility.

"Gray Building" - 227 West Broad Street

Finished in 1856, this structure is one of the soundest and elegant of all American early railroad office buildings. The portice with Doric columns makes it in the Greek revival style. The interior is very ornate in certain rooms containing the "original Fireplace," first floor, a plaster panel in the ceiling of the pediment over the entrance, and the original plaster rosette in the ahll of the second floor ceiling, second floor.

Used as an office building continuously from its completion, the structure is still very sound and useful today. It provides a note of elegance and taste to the functional and commercial buildings that surround it. No doubt, this was the intention of the directors in erecting such a building. The maintenance and use of this building should be insured by the Southern Railroad because of its historic and architectural merits with regard to the history of railroading. It was designed and built by Mueller and Schwaab of Savannah, Georgia.

"Red Building" Central of Georgia Office Building - 233 West Broad Street

This is a large three story, red brick, structure erected in 1887. The ground floor is of granite, and there are dormers on each side. Romanesque influences can be seen in the arched doorways and windows. The building was constructed to accommodate the expanding clerical staff of the Central of Georgia. When complete, the total cost of the "Red Building" was estimated to be \$30,000. [72]

This building is, generally, in the late Victorian style and it is adjacent to the "Gray Building" on the one side and the castellated "Cotton Yard" fence on the other. Unfortunately, THIS BUILDING IS IN DANGER SINCE NO ONE RECOGNIZES ITS ARCHITECTURAL MERITS. In the general terminal setting, it provides a link between the older, original structures and the architectural motifs used in the late Nineteenth century by railroad lines. [73]

This is probably the most endangered structure of the whole original terminal facilities of the Central of Georgia. Some use should be found for this fine building.

"1853 Brick Archway" - Southernmost on West Boundary Street

Erected in 1852, this archway over the Ogeechee Canal was designed and built by Mueller and Schwaab of Savannah, Georgia. The masonry work was done by Benjamin F. Armstrong of Savannah. [74] The "1853" four span archway is the one constructed and used as the mainline of the Central of Georgia for well over one hundred years.

Old Savannah Grey bricks, measuring three inches by four inches by nine inches, were used throughout this structure. The mainline or "1853" bridge archway is designed with elliptical arches. The "1853" bridge is 149 1/2 feet in length and 42 feet wide. Each of the four spans of the archway is 30 feet wide, and the clearance from the crown of the arches to the original ground line is 15 feet and 2 inches. [75]

The retaining walls of the bridge over the mainline are significant pieces of work in themselves, especially the one on the east end, south side which is 548 feet in length. It runs from the wing wall and abuts the parapet and retaining wall of the passenger station train shed. The other retaining walls average about 60 feet. The coping of the main bridge is Vermont red sandstone. [76]

This is an imposing and sturdy structure. Used until a few years ago, the mainline bridge carried fourtimes the original weight that it was built for with no visible or structural evidences of deterioration. The three little archways between the larger archways provide drainage for the structure. [77]

This archway is but another example of the enduring quality of all the brick structures erected by the Central of Georgia. Occasionally, the highway department thinks about tearing this structure down since it inhibits trucking along U. S. Highway 17A, but the structure does not appear to be in any immediate danger.

"1860" or "Dooley Yard Archway" - Northernmost Archway, West Boundary Street

This archway spans the Old Ogeechee Canal on the Dooley yard lead between warehouses 11 and 12 at the rear of the "Red and Gray Buildings." It was constructed in 1859 by Mueller and Schwaab of Savannah, and the masonry was done by Benjamin F. Armstrong of Savannah. [78]

Three by four by nine inch Savannah Grey bricks were used throughout the structure. The bridge is a series of four arches, and they are segmental in style and construction. The Dooley yard lead is 242 feet long and 30 feet wide. The "1860" bridge, in addition to being longer than the "1853" archway, has larger arches. These arches measure 48 feet and four inches, and the clearance from the crown of the arches to the ground line is 17 feet. Retaining walls for the Dooley bridge are about 35 feet in length. [79]

The lapse of time has only added to the rugged beauty of this structure. For several years before its construction, the Central of Georgia management contemplated putting up an iron span but to preserve the esthetic qualities of the terminal facilities, a brick archway was finally decided upon even though it cost more. This archway like the earlier one spanning the same canal was used for over hundred years without strengthening in spite of the fact that the tonnage of the Central of Georgia's locomotives increased over four hundred per cent. [80]

"Cotton Yard Fence" - West Broad Street

The towers that used to support the massive gates to the "Cotton Yard" of the Central of Georgia were erected during the Civil War for security reasons. [81] The wall itself was erected in 1855 by Mueller and Schwaab of Savannah, and the masonry is by Benjamin F. Armstrong. [82] The towers housed the gate keepers who kept an eye on all the traffic passing in and out.

These gates on West Broad Street were finished in 1867, when the castellation was added. [83] The gothic motif probably was meant to go along with the brick archways and the Italianate features of the Passenger Depot. These arches are striking examples of railroad architecture. They add to the historical and architectural uniqueness of the facility.

Analysis of the Station Plan of the Central of Georgia

The passenger depot and train shed of the Central of Georgia are basically of the head type in design. [84] That is, arrival and departure took place in a single building across the end of the tracks. Similar to other stations of this period, the Italian Villa style with roundheaded arches make this Station plan of architectural significance since it is a good example of this kind of early planning and architecture. [85]

The main idea behind these interpretations and stylistic labels of Italian villa or gothic style was not scholarly accuracy but, as in Europe, to invest the architecture with the reassuring garb of traditional forms. The gothic form was rarely used in America in the 1850's and the Central of Georgia complex is one of the finest examples of this trend.

Train Shed - West Broad Street and Louisville Road

Built in 1860, the train shed is West of the Passenger Depot. It was constructed by Mueller and Schwaab of Savannah. The masonry work is by Benjamin F. Armstrong of Savannah also. [86] The trusswork of the train shed is unusual; it is not the Howe type and there appears to be no other design such as this used elsewhere. The trusswork gave the Central of Georgia engineers trouble for ten years after its completion due to its unusual design. However, once it was in place and secured properly, it has caused no problems. [87]

The structure has a wooden roof and brick romanesque arches on the North and South sides. The iron gates on the South side are particularly notable. The train shed is essentially the same as it was when it was built over a hundred years ago. It is hoped that the Savannah Chamber of Commerce will not alter this structure significantly, when it completes its renovation of the Passenger Depot.

"Passenger Depot" - West Broad Street and Louisville Road

Erected in 1860 but not in use until 1865, the "Passenger Depot" is a two story structure of red brick. [88] Pilasters ornament the entrances facade to the building, and its windows are arched. These features give it an eclectic appearance of Greek revival and Italianate styles. Of course, the western side of the "Passenger Depot" is bordered by the train shed.

Due to the Civil War, the glass and other materials needed to complete it were not available so the structure was boarded up to prevent it from deterioration. [89] The structure was used as a passenger station for over a hundred years, and it recently was acquired by the Savannah Chamber of Commerce to be remade into a Welcome Station. The interior of the building has been gutted and redone while the exterior remains essentially the same. Often, the building is said to have had columns on its entrance facade or meant to have them, but there is no evidence to substantiate this assertion. Probably, Benjamin F. Armstrong was the mason, and Mueller and Schwaab the designer and builder. Both of these firms were Savannah based.

Footnotes

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3. Savannah Daily Georgian, June 4, 24, and February 13, 1836.
4. First Report of the Stockholders of the Central of Georgia, May, 1838, p. 2, Central of Georgia Archives, and Savannah Daily Georgian, March 1, 1835.
5. Savannah Daily Georgian, August 13, 1836.
6. First Report of the Central of Georgia, pp. 7-12.
7. Ibid., pp. 13-15.
8. Savannah Daily Georgian, December 19, 1836 and November 21, 1836.
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13. Eighth Report, 1842, p. 74.
14. Second Report, 1838, p. 33.
15. Ibid., pp. 25-26.
16. Savannah Daily Georgian, May 25, 1837.
17. Ibid., May 6, 1837.
18. First Report, 1840, p. 19.
19. Fifth Report, p. 54.
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21. Ibid.
22. Ibid., p. 58.
23. Sixth Report, 1841, p. 63
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25. Fourth Report, 1839, p. 44.
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31. Fifth Report, 1840, p. 51.
32. See Ulrich B. Phillips, Transportation in the Eastern Cotton Belt to 1860 (New York, 1908), p. 162.
33. Ibid., p. 262.
34. Fourth Report, 1839, p. 43, and Sixth Report, 1841, p. 68, Central of Georgia Archives.
35. Seventh Report, 1842, p. 73, and Ninth Report, 1844, p. 92, Georgia Historical Society.
36. See Ninth Report, 1844, passim.
37. Central of Georgia Magazine, September, 1943.
38. See Ninth Report, 1844 pp. 84 and 92.
39. Savannah Daily Morning News, July 17, 1855.
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42. Ibid., July 17, 1855.

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73. See also The Right Way, December 20, 1958.
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William M. Wadley and the Development of the
Central Railroad of Georgia*

by Donald Grinde

Few historians realize how closely the life of William M. Wadley and the growth of the Central of Georgia are related. William W. Gordon and Richard R. Cuyler are the usual names that scholars associate with the early development of the Central. But Wadley's influence on the Central also began in the construction stage in the late 1830s and ended over 40 years later when he died in the presidency in 1882. [1] One could easily say that William Wadley and the Central of Georgia grew up together since he worked for the Central most of his life.

William Wadley came penniless to Savannah in the 1820s. He left New Hampshire as a young man of 19 to work on the construction of Fort Pulaski. He was resourceful and hardworking so he gradually worked his way up from blacksmith to engineer on the Pulaski project. [2] The years Wadley spent at Fort Pulaski proved to be an ample apprenticeship for the engineering projects he would undertake for the Central of Georgia.

In 1837, Wadley began the Central's first bridge across the Ogeechee Canal just west of Savannah.. Upon completion of the bridge at Savannah, Wadley was awarded the difficult Oconee bridge contract in 1840. [3] While working at the Oconee River just above Williamson's Swamp Creek, he operated a very profitable blacksmith shop and brickyard. Both of these operations furnished Wadley with construction materials for bridge masonry and with iron chairs for joining the rails. [4] "Swamp fever" delayed the final completion of this bridge until 1844, although trains were running over the bridge in 1843. [5] These delays were costly not only to Wadley as a private contractor but also to the Central. Chief Engineer, L. O. Reynolds, complained that "... the almost universal prevalence of fever among men, renders them unfit for duty, and it is almost impossible to employ others to take their place." [6] With this environment, work sometimes proceeded at a crawl on the Oconee bridge.

But Wadley made a favorable impression on the management of the Central while he was at the Oconee project. When he completed the bridge and the road was opened for regular traffic in 1844, Wadley was made one of the four contractors to perform maintenance and repairs upon the roadbed. This contract maintenance procedure was abolished almost immediately as unworkable, and Wadley was given a salaried job with the Central in 1844 as superintendent of maintenance. [7]

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In 1849, Wadley became general superintendent of the Central and set out to introduce substantial changes in the roadbed. For instance, he believed that the river and swamp waters needed more room to go underneath the troublesome Oconee bridge so he stopped the former general superintendent's policy of filling-in areas around the bridge. Instead, he extended the lattice bridge and added substantial brick foundations to the structure also. [8]

Also, it was Wadley who re-introduced the T-rail and speeded up replacement of the plate iron rails. Similarly, he replaced the old light T-rail with the heavier 43 and 52 pound T-rails. The whole conversion process to a heavier T-rail was completed shortly before the Civil War. [9]

By the 1850s, Wadley was using re-rolled rails. After experiencing difficulties in procuring English iron, he started buying rails from American mills and accepting their offers to re-roll old iron. [10] The results were quite satisfactory, according to Wadley.

The timbered superstructure of the railroad was a much more vexing problem for Wadley. The superintendent laid the ties four feet apart rather than eight feet and tried to lay the rail directly on the ties without using the string pieces. This process proved unworkable because it was labor intensive and the joints depressed as equipment moved over the tracks. [11]

In another change involving the timbers, Wadley was more successful but also more controversial. In the 1850s, the young superintendent directed that not only could the stringers be raised above the earth but also they could be smaller and sawed rather than hewn. These changes cut costs but produced a controversy.

From 1840 to 1860, stringers and ties were purchased from landowners along the route of the Central. Since there were few sawmills, ties and string timber were hewn and taken to a depository along the road. But in 1850, Wadley advertised a contract for sawed stringers specifying that the contractor be able to furnish materials for at least half of the road for a period of five years. Subsequently, a contract was awarded to D. R. Wadley for five years to furnish stringers for the entire road. D. R. Wadley was William Wadley's brother, and he operated a sawmill with two other brothers. [12]

Awarding the contract touched off protest from suppliers in Effingham and Screven counties. In the fall of 1850, a group of timbermen brought pressure on the Central to have the new contract system reviewed at a stockholders committee. The suppliers of timber felt that Wadley should not have contracted with one company since it did not distribute the bene-

fits of the road evenly. Similarly, they stated that insufficient notice was given for sawmills to be built. The timbermen also argued that the smoother hewn timbers were better than the coarse sawed wood. Lastly, they asked that contracts for the lower half of the road be awarded to the local citizenry. The matter was examined by the committee, and in June, 1851, William Wadley's decisions were vindicated. [13]

However, the suppliers to the Central continued to be disgruntled with Wadley's system of awarding contracts. They accused him of using his office with the railroad to subsidize the profits of this lumber, brick, and iron works. [14] Wadley countered this by stating that he was interested in developing efficient suppliers at the lowest cost through these contracts and that they were awarded fairly. [15]

Wadley's most significant impact on the Central's management during his superintendency was the development of a uniform system of road maintenance. Slavery had been used on a contractual basis since the road was completed - 1844, but Wadley altered this system by using Negroes directly under Central section masters. Even though it cost more initially in the early 1850s, Wadley felt that this system was best. On the eve of the Civil War, the Central owned slaves in its own right. The total amount invested in slaves by 1860 was \$58,863, and the figure quadrupled during the War Between the States. [16]

Other improvements in the road were the result of the ravages of nature. A freshet in 1852 washed away the trestle at the Macon bridge and severely damaged the Oconee bridge. The solution to the flooding problem was to elevate whole sections of the road between the Oconee River and Macon. [17]

Perhaps Wadley's most enduring and historic contribution to the Central was the planning, development, and building of the railroad station and yard at Savannah. Contemporary reports as early as 1855 praised the station for being one of the "... most complete and elegant railroad stations in the country ..." [18] Located in northwestern Savannah on New and West Broad Streets, the station and yards comprised about 35 acres and over a dozen buildings. The structures were described as being of

... fine architecture and arrangement, well lighted, well ventilated, and every way well arranged, the roofs of iron, and when it is considered that they have not been put up piecemeal, but that they form collectively a completed and symmetrical whole, we doubt candidly if any other station can be found in the country which can equal this. [19]

The total expenditure for the entire station complex was a little over \$500,000. While this was a considerable sum and the station was beautiful and complete, there was not one feature considered to be extravagant. Under Wadley's superintendency, the employment at the Savannah station was over 550 men with a monthly payroll of \$20,000 in wages. An observer of railroads commented that this size payroll was indicative of the great business of the ". . . Georgia Central road and of the enterprise and energy with which it is conducted." [20]

As the Central railroad yards were nearing completion, Wadley left his job as superintendent in 1857 to oversee construction of the New Orleans, Jackson, and Great Northern Railroad in Louisiana. [21] The Panic of 1857 bankrupted this road, and he went to work as superintendent for the Southern Railroad (Vicksburg to Meridan). Later, he became president of the Vicksburg and Shreveport on the eve of the Civil War. In the early part of the War Between the States, President Jefferson Davis appointed Wadley Colonel in the Adjutant General's Department and assigned him to direct transportation in the Confederacy. He did this from November 16, 1862, until May 22, 1863, when the Confederate Senate failed to confirm his appointment. Speculation has it that he was suspect to the Senate because he was born in New Hampshire and had only spent his adult life in the South. [22]

In the fall of 1865, Wadley was in Louisiana trying to salvage his assets when he received a letter from John W. Adnderson, Chairman of the Board of the Central. The letter urged Wadley to return to Georgia and help rebuild the war ravaged road. As a result of the letter, he journeyed to Savannah and found that he had been appointed as superintendent of repairs. Moreover, the salary was only \$3,500 per annum, and the position was not to Wadley's liking so he declined the offer and returned to Louisiana. [23]

In spite of Wadley's refusal to take a position with the Central, many prominent people felt that Wadley was the man to rebuild the Central. On January 4, 1866, the Board of Directors asked William M. Wadley to return to Georgia and assume the presidency of the Central. He accepted, and a new era of expansion began for the line. [24]

During Wadley's tenure as president (1866-1882), the Central enjoyed its greatest period of expansion. The original 191 miles of track was increased sevenfold by the conclusion of his administration. [25] The motivations for this expansion were complex. Was Wadley concerned with the "glories" of expansion or was the rela reason "the struggle for existence" in a competitive situation? In fact, increased competition often mandated expansion in order to take advantage of new markets and to stabilize the rate system.

The sources of competition were not new to the Central in the late 1860s. Brunswick still sought state aid to build the Macon and Brunswick as well as the Brunswick and Albany. Also, the Atlantic and Gulf anchored at Brunswick and Savannah began to push further into Southwestern Georgia in a bid to divert more traffic from the Central lines. [26] The Central opposed state aid to these lines because it would "... divide business." [27]

With the expansion of railroad lines and the resulting competition, Wadley warned the stockholders that conflict was inevitable. Consequently, he developed a policy of mostly plowing back profits rather than issuing dividends. [28] Although Wadley was fiercely competitive, he also prudently bought out some competing lines to assure traffic to the main stem of the Central. This was the single most important policy of Wadley's presidency.

In 1866, just two years after Sherman's March, the Central was again lending its aid to tributary roads in Alabama. Although the Central had no cash, it did lend its credit to the Mobile and Girard Railroad through \$250,000 worth of the line's bonds. Additional aid was continued for the line since Wadley felt such a policy was necessary "... for the ultimate security of the Company." [29] Many critics thought that his terms for aid were too harsh because the roads assisted were contractually bound to

... make no connection or through rates either for freight or passenger traffic except with the Central railroad ... until the bonds so be endorsed shall be fully paid or cancelled. [30]

In 1869, the Central also faced problems in the State of Georgia. With stepped up state aid, the Macon and Brunswick had reached Macon in 1869, and the Atlantic and Gulf had purchased the Georgia and Florida, completing a connection with Albany on the Southwestern. Increased competition for traffic resulted, and Wadley offered three steps to combat these rate wars. Initially, the Central should initiate gentlemen's agreements about rates with competing lines. Failing in this, the lines should be purchased. Finally, the Central should tighten its control over roads already a part of the system. [31] Throughout the 1870s, the Central was in and out of court pursuing these policies. Similarly, cooperative agreements or "pools" were also used but only with measured success.

In view of such competitive pressures, Wadley instituted a program of spending cash to obtain control over tributary systems. In the 1870s, the Central expanded in three ways. First, it reestablished its steam ship affiliation. Second, the management extended new lines westward into Alabama. Finally, the Central promoted local feeders. [32]

As a result of the Civil War blockade, the shipping connections of the Central were severed. In 1866, Wadley began to subsidize a private steamship line since a piedmont to coast railroad needed a north to south route to market cotton. [33] But these subsidies were unsatisfactory for the Central's purposes so the president purchased six wooden, side-wheeled vessels for \$600,000 in cash and bonds. William R. Garrison was made New York Agent for the company. Eventually, a separate company had to be created to comply with legal problems that arose with this purchase. On October 26, 1872, the state legislature incorporated the Ocean Steamship Company. [34] After the establishment of the steamship line, Wadley predicted that it would handle 75 percent of the Central's through business and be self-supporting, and his predictions were fulfilled. [35] By the end of his presidency, the line was a great asset to the Central.

In 1868, the Central also began to extend new lines and services into West Georgia and Alabama. Two riverboats were running on the Chattahoochee and Flint Rivers. They fed the Central and were self-sustaining. [36] However, four nominally independent railroads extending into Alabama cotton lands were not as successful for the Central. Two of these roads extended from Columbus, one from Griffin, and one from Eufala. All of these lines were plagued with financial difficulties in the 1870s. These Alabama railroad lines were never really profitable during the Wadley era.

Wadley's success in the promotion of branch lines and short feeders was a little better than his record of expansion into Alabama. In 1872, the Central completed surveys at cost for the Louisville and Wadley, the Sandersville, and the Talbotton Railroads. [37] Two other branch lines were built as extensions of the Southwestern. These were from Fort Valley to Perry and Albany to Blakely. The Fort Valley to Perry Line was completed in early 1873, while the Albany to Blakely road was not finished until the mid-1880s. [38] While these lines strengthened the overall system, their profitability was dubious especially in bad years. [39]

The last major expansionary efforts of the Central under William Wadley were in the early 1880s, and they were designed to stem the rivalry of other roads and interests. After the depression of the 1870s, many marginal lines went into receivership, and the more important of these roads were acquired by larger and more prosperous systems. Also, the new competition after the Civil War involved the capturing of north-south freight rather than channelling west-east freight to coastal ports. Of course, the steamship line from Savannah to the North enabled the Central to compete quite favorably for this traffic.

Three large syndicates, the Erlanger, Georgia Pacific, and the Louisville and Nashville, began to move into the Central's territory in the 1880s. The Erlanger syndicate, a German firm, acquired the Brunswick and Albany and reorganized it into the Brunswick and Western with an eye to purchasing a

western terminus in New Orleans. Likewise, the Georgia Pacific had bought the Georgia Western which was building westward from Atlanta. The Georgia had only recently come under the domination of the Richmond and Danville, thus establishing firmly its north-south connections. Lastly, the Louisville and Nashville was reaching down into Alabama with its eyes on the old Atlantic and Gulf line to consolidate its interests. [40] These large systems clearly threatened the Central's interests.

Basically, the independent and locally owned Central was engaging in a new rivalry for large sections of the Southeast. Wadley and others viewed with concern the encroachment of these new combines into the South. Wadley and the management could resist or cooperate. In most instances, Wadley's choice was to fight.

The basis for resistance to the large combines as the Central's acquisition of the Vicksburg and Brunswick and the Montgomery and Eufala in 1879. Wadley bought these in his own name since the new Constitution of Georgia (1877) prescribed that the Central own no other railroads. [41] These two purchases were done to stop efforts by the Erlanger syndicate to extend the Brunswick and Albany into Alabama. Similarly, the Montgomery and Eufala was acquired to frustrate the efforts of the Louisville and Nashville in Alabama. Wadley stated that the road to Montgomery was strategic and that "if in the hands of parties whose interests were antagonistic . . . (the Central's) interests would not fail to suffer seriously." [42] Consequently, the Southwestern branch to Eufala had two extensions, one to the capital of Alabama and the other to Clayton.

As the coal and iron fields of Birmingham developed, the Central of Georgia could either extend the Savannah, Griffin, and North Alabama or build northwestward from Opelika. Although the former route was the most feasible, the Central chose the Opelika route because it had purchased the Opelika to Goodwater at a judicial sale on June 5, 1880. [43] Thus, the Central was already well on its way to Birmingham.

While the Erlanger and Georgia Pacific interests still competed with the Central in Alabama, the Louisville and Nashville and the Central were drawing closer together in a symbiotic relationship. As the overland routes from the Northeast reached Atlanta and extended into Alabama, the Central and the Louisville and Nashville came closer together to combat a common foe. In January, 1880, the Louisville and Nashville gained control of the Nashville, Chattanooga, and St. Louis. [44] This act bound the two roads together since the Nashville, Chattanooga, and St. Louis had leased the Western and Atlantic (Chattanooga to Atlanta) and effectively extended the Central into West Tennessee. [45] The external threat of northern routes and interests moving into the Southeast caused the Central and the Louisville and Nashville to form an alliance for their mutual benefit.

The Louisville and Nashville's victory over the Nashville, Chattanooga, and St. Louis, caused its president, E. W. (King) Cole, to resign and turn for assistance to the Metropolitan Bank and Seney interests in New York. Cole wanted to establish a rail system to get supremacy from Tennessee to the Georgia coast. He wanted to acquire the Macon and Brunswick, rival to the Central, and weld together a string of lines from Rome to Brunswick. In preparation for this onslaught on the Central, Cole had purchased lesser lines in Tennessee and Virginia. [46] Both the Central and the Louisville and Nashville viewed this activity with dismay.

Compelled by circumstance, Wadley acted with swiftness and daring. He leased the entire properties of the Georgia Railroad. In April, 1881, Wadley had asked the consent of the directors in the leasing arrangement, but it was not forthcoming. [47] As Bryan Cumming, attorney for the Georgia Railroad, General A. R. Lawton, General Counsel for the Central, and Wadley were leaving the Director's meeting, Wadley began to curse and then stated that he would personally lease the Georgia Railroad. [48] The three returned to the office and promptly negotiated a lease of the Georgia Railroad to William M. Wadley. The lease stated that the Georgia Railroad should rent out to the Central all of its transporting privileges. This lease also included the Georgia Railroad's interests in other roads such as the Atlanta and West Point, the Western of Alabama, the Port Royal and Augusta, the Rome Railroad, and the Walton Railroad. Only the non-railroad functions of the Georgia Railroad like the banking house and the cotton presses were not included. [49]

In September, 1881, Wadley summarized the transaction in glowing terms. He stated that through the "friendly interposition of interested parties" the Georgia, Atlantic and West Point, and Port Royal Railroads "have been brought into harmonious action with out road." [50] As a result, the Central and the Louisville and Nashville were in total control of the major rail lines from the Ohio to the Atlantic. However, the spectre of Cole and northern bankers still haunted the management of the Central. But for the moment, the Central and the Louisville and Nashville had a monopoly on the through business from the Midwest to the Southeast coast.

The bold stroke to lease the Georgia Railroad personally was the high point of Wadley's 16-year tenure as president. Subsequently, the Directors awarded him \$12,500 for "extraordinary service rendered" and the Louisville and Nashville gave him a like amount ". . . in lieu of profits he might have made as compensation for the risk involved" with regard to the Georgia Railroad lease. [51]

Late in 1881, the Directors of the Central established the office of vice president for the benefit of the aging Wadley. This office was to provide assistance to Wadley in managerial areas. Perhaps the Directors sensed his weariness since he died the next year on August 10, 1882. [52]

With Wadley's demise, an era in the Central's history was closed. Wadley was probably the only person in the Central's history to have held a position in every major function of the operation of the line. This experience represented a lifetime of work and dedication to the road he knew so well.

As railroad engineer, superintendent, and then president, Wadley's contribution to the growth and development of the Central and the economy of Georgia was quite significant. After helping to build the roadbed and offering new ideas in that area, Wadley went on to design the station and yard at Savannah. By many accounts, the Savannah rail complex was one of the best planned yards of its era. Wadley's idea to completely plan the layout of the yard was both innovative and practical in an era when expansion of railroad facilities grew without any direction. The physical layout of the Savannah yards stands as a monument to the knowledge and foresight of an experienced and practical railroad man.

When Wadley assumed the presidency of the Central after the Civil War, the road was a shambled. In 1866, the road consisted of a single trunk line to Macon, a minority interest in the Southwestern, and two leased branches. Sixteen years later, under Wadley's aegis, the road had been expanded to suit the needs of Georgia and the Southeast. More important, the railroad financier and entrepreneur had made the Central one of the few Southern roads holding its own against the encroachment of the heavily financed systems of Europe and the North.

When Wadley ruled the Central, the road reached its peak in power and prestige. The former blacksmith, Central superintendent, and director of transportation for the Confederacy maintained the dominance of the Central over the Southeast in spite of tremendous railroad growth in the South. But times were changing by the end of Wadley's presidency.

Three factors played an important part in curbing the Central's power and dominance. First, the maturing of large northern railroad combines in the South threatened the independence and markets of the Central in the Southeast. Second, the advent of new management concepts changed the nature of the Central. Conservative railroad managers interested in property as a long-term investment had to yield to new entrepreneurial concepts which viewed the road as an object of wealth. These men were interested in immediate financial returns. Wadley avoided these ideas, for the most part, during his presidency, but his death touched off a struggle over immediate return on investment that took several years to resolve. Finally, the end of the Wadley era saw the implementation of effective state regulation of railroads. The Railroad Commission of Georgia, created in 1879, began to enforce lower rates through a cost-of-service mechanism. In the use of this principle, Wadley saw freight tonnage increase but gross receipts did not increase proportionately.

Increased operating expenses and maintenance costs also cut into the revenues of the Central. When Wadley complained about these procedures, the Commission replied that the Central was over-capitalized. [53] Subsequent legislation to regulate railroads in Alabama and South Carolina as well as on the federal level created even more problems for the management of the Central.

In view of Wadley's life long dedication to the Central, the transplanted Georgian from New Hampshire contributed much to his adopted state of Georgia. No doubt, he was committed to the economic development of the Southeast as well as the furtherance of the power and wealth of the Central system. Paradoxically, Wadley seemed very sensitive about the incursions of northern capital into the South after the Civil War. This is remarkable and admirable for a man of his background. He always stood for economic self-determination in Georgia as well as the Southeast. Northern capital, technological change, and increased government regulations would alter the status of the Central in the future, but Wadley's legacy of a strong and independent Central at his death remains as a testimony to his abilities.

Today, only a monument in Macon and a town, Wadley, stand as a memorial to man that did so much for southern railroading and the state of Georgia. Even though his loyalty was questioned by the Confederate Senate as director of transportation, Wadley never left the South or expressed bitterness over such slights. His role in the development of the Central was lifelong, and he was involved in virtually every facet of the business of the road. His impact upon the Central and the economy of the Southeast was profound and pervasive. At the time of Wadley's death, the Central of Georgia was one of the foremost rail systems in the South.

1. See T. B. Catherwood, ed., The Life and Labors of William M. Wadley, (Savannah: Morning News Steam Printing House, 1885).
2. Sarah Lois Wadley, A Brief Record of the Life of William Wadley, Written by his Edlest Daughter, (New York: A. S. Barnes, 1884), pp. 18-23.
3. Ninth Report to the Stockholders of the Central Georgia Railway, 1844, p. 93, Georgia Historical Society.
4. Wadley, Life of William M. Wadley, pp. 21-23.
5. Ninth Report, 1844, p. 93.
6. Seventh Report, 1842, p. 78.
7. Catherwood, Labors of William M. Wadley, passim.
8. Sixteenth Report, 1850, p. 208, and Sixteenth Report, 1851, p. 223.
9. Seventeenth Report, 1851, p. 222, and Twenty-third Report, 1857, p. 72.
10. Jefferson Max Dixon, "The Central Railroad of Georgia," (Unpublished Doctoral Dissertation, Emory University, 1953), p. 149.
11. Sixteenth Report, 1850, p. 209.
12. Annual Report to the Stockholders of the Central of Georgia Railway, I, pp. 226-230.
13. Ibid.
14. The Central Railroad and Its Management, an Exposition to the Stockholders, the Citizens of Savannah, and the Public Generally, (n.p., n.d.) in Central of Georgia Archives.
15. Wadley, Life of William M. Wadley, p. 23.
16. Twenty-ninth Report, 1863, p. 252.
17. Twentieth Report, 1854, p. 15. Actually, this reconstruction project was completed by Colonel Miller, who was superintendent in 1852 since Wadley was superintendent for the Western and Atlantic Railroad for most of 1852.
18. Savannah Daily Morning News, July 17, 1855.

19. Ibid.
20. Ibid.
21. Wadley, Life of William M. Wadley, p. 24.
22. Mary Raoul Millis, The Family of Raoul, (Asheville, North Carolina: Miller Printing Company, 1943). p. 17.
23. Wadley, Life of William M. Wadley, p. 48-52.
24. Ibid, p. 58.
25. "Promotional Report," Central of Georgia Archives.
26. Thomas Gamble, History of the City Government of Savannah (published "under the direction of the City Council," 1900), p. 23.
27. I. W. Avery, History of the State of Georgia from 1850 to 1881, (New York: Brown and Darby, 1881), p. 444.
28. Wadley, Life of William M. Wadley, p. 95.
29. Thirty-first Report, 1866, p. 356.
30. Thirty-third Report, 1868, p. 9.
31. Thirty-fourth Report, 1869, p. 11.
32. Dixon, "The Central Railroad of Georgia," p. 232.
33. Central Railroad and Banking Company of Georgia v. Collins, 40 Georgia 522.
34. The Right Way Magazine, October, 1928, p. 16, and Thirty-ninth Report, 1874, p. 7.
35. Fortieth Report, 1875, pp. 70-73.
36. Thirty-eighth Report, 1873, p. 12.
37. Thirty-seventh Report, 1872, pp. 36-37. The Louisville and Wadley was finished in 1879, and the Talbotton in 1881, but the Sandersville line was not completed until the mid-1880s.
38. Poor, Manual of Railroads, 1881, p. 399.
39. Thirty-sixth Report, 1871, pp. 9-10, and Thirty-seventh Report, 1872, pp. 36-37.

40. Avery, History of Georgia, pp. 634-637.
41. Interstate Commerce Commission, Evaluation Docket No. 60, 1924-1927, p. 156.
42. Ibid.
43. Poor, Manual of Railroads, 1881, p. 399.
44. Jesse Clifton Burt, "History of the Nashville, Chattanooga, and St. Louis Railway, 1873-1917," (Unpublished Doctoral Dissertation, Vanderbilt University, 1950), passim.
45. Avery, History of Georgia, p. 636.
46. Ida Young, History of Macon, Georgia, (Macon: Lyon Marshall and Brooks, 1950), p. 337.
47. John Lee Smith, "Central of Georgia Railway, 1865-1895," (Unpublished Master's Thesis, University of Georgia, 1949), p. 75.
48. Mary G. Cumming, The Georgia Railroad and Banking Company, 1833-1945: An Historical Narrative, (Augusta: Georgia Railway, 1945), p. 90.
49. Ibid., pp. 88-90.
50. Forty-sixth Report, 1881, pp. 9-10.
51. Wadley, Life of William M. Wadley, p. 81.
52. Dixon, "The Central Railroad of Georgia," p. 253.
53. Ibid., p. 13

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SAVANNAH REPAIR SHOPS...
HAER No. GA-1 (Page 122)

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**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC

Central of Georgia Railroad: Savannah Shops & Terminal Facilities

AND/OR COMMON

2 LOCATION

STREET & NUMBER Vicinity of West Broad Street
and Railroad Avenue

CITY, TOWN

Savannah

10 VICINITY OF

NOT FOR PUBLICATION
CONGRESSIONAL DISTRICT

STATE

Georgia

CODE

COUNTY
Chatham

CODE
051

3 CLASSIFICATION

CATEGORY	OWNERSHIP	STATUS	PRESENT USE	
<input checked="" type="checkbox"/> DISTRICT	<input type="checkbox"/> PUBLIC	<input type="checkbox"/> OCCUPIED	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> MUSEUM
<input type="checkbox"/> BUILDING(S)	<input type="checkbox"/> PRIVATE	<input checked="" type="checkbox"/> UNOCCUPIED	<input type="checkbox"/> COMMERCIAL	<input type="checkbox"/> PARK
<input type="checkbox"/> STRUCTURE	<input checked="" type="checkbox"/> BOTH	<input type="checkbox"/> WORK IN PROGRESS	<input type="checkbox"/> EDUCATIONAL	<input type="checkbox"/> PRIVATE RESIDENCE
<input type="checkbox"/> SITE	PUBLIC ACQUISITION	ACCESSIBLE	<input type="checkbox"/> ENTERTAINMENT	<input type="checkbox"/> RELIGIOUS
<input type="checkbox"/> OBJECT	<input type="checkbox"/> IN PROCESS	<input checked="" type="checkbox"/> YES: RESTRICTED	<input type="checkbox"/> GOVERNMENT	<input type="checkbox"/> SCIENTIFIC
	<input checked="" type="checkbox"/> BEING CONSIDERED	<input type="checkbox"/> YES: UNRESTRICTED	<input type="checkbox"/> INDUSTRIAL	<input type="checkbox"/> TRANSPORTATION
		<input type="checkbox"/> NO	<input type="checkbox"/> MILITARY	<input checked="" type="checkbox"/> OTHER: Abandoned

4 OWNER OF PROPERTY

NAME

City of Savannah and The Southern Railroad Company

STREET & NUMBER

City Hall

920 - 15th Street, NW.

CITY, TOWN

Savannah, GA.

VICINITY OF

Washington, D. C.

STATE

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE,
REGISTRY OF DEEDS, ETC.

Chatham County Courthouse

STREET & NUMBER

CITY, TOWN

Savannah, Georgia

STATE

6 REPRESENTATION IN EXISTING SURVEYS

TITLE

Historic American Engineering Record

DATE

Summer 1975

☒ FEDERAL ☐ STATE ☐ COUNTY ☐ LOCAL

DEPOSITORY FOR
SURVEY RECORDS

Library of Congress

CITY, TOWN

Washington, D. C.

STATE

7 DESCRIPTION

SAVANNAH REPAIR SHOPS...

HAER No. GA-1

(Page 123)

CHECK ONE

CONDITION

CHECK ONE

☐ EXCELLENT
☐ GOOD
☐ FAIR

☒ DETERIORATED
☐ RUINS
☐ UNEXPOSED

☐ UNALTERED
☒ ALTERED

☒ ORIGINAL SITE
☐ MOVED DATE _____

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The landmark district is a 33.2 acre industrial site located roughly within a rectangular property bounded by West Broadway, Jones, West Boundary, and New Streets. The property encompasses most facets of the Central of Georgia Railroad Company's Savannah Terminal facilities including the former administrative, transportation, and engineering offices; the shop buildings of the motive power department; freight warehouses and the former cotton yard. The passenger depot and trainshed, completed in 1876 and 1861 respectively, are included as part of this district, but already have been designated a national historic landmark (December 8, 1976) because the shed is the oldest of the eleven surviving long-span, trussed roof trainsheds in America. The district also includes the two brick-arch viaducts carrying the Dooley Yard tracks and the main line tracks over West Boundary Street and the Savannah and Ogeechee Canal. The descriptions of the buildings and structures are organized by the functional breakdown outlined above except for the depot and trainshed which were discussed in the 1976 nomination.

ADMINISTRATIVE, TRANSPORTATION & ENGINEERING OFFICES

A. GRAY BUILDING (1856):

The first permanent office building for the Central Railroad and Banking Company (this name was changed in 1895 to the Central of Georgia Railroad Company) was completed in 1856 on West Broad Street at the head of the Up Freight Warehouse. The building was the corporate headquarters of the railroad and housed its transportation and administrative offices. It is a two story, rectangular, brick structure in the Classic Revival style, 9 bays long and 6 bays wide, divided by pilasters, with a pedimented gable roof, and a full height pedimental portico. The building is painted gray and continues to serve as division offices for the Southern Railroad. The design is attributed to Augustus Schwaab, who is thought to have been the architect, along with Martin P. Mueller, of many of the railroad buildings in this district, but this has not been definitely documented.

B. RED BUILDING (1887):

To provide more room for the administrative offices, clerical staff and engineering department, the "Red Building" was constructed in 1887 in the Queen Ann style by Fay and Eichberg, architects. It fronts on West Broadway at the head of the 1859 Produce or Down Freight House and has an addition to the rear completed in 1910. A vault projecting from the north elevation houses an extensive drawings and records archive which has been donated to the Georgia Historical Society. The building is 5 bays wide and 12 bays long with 15 additional bays to the rear. The first floor is granite ashlar, and the second and third of red pressed brick. A pedimented dormer sits above an arched stairwell to the second floor. The building is ornamented with terra cotta tile

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decorations, and the windows have colored art glass typical of the style and period. The Red Building is vacant.

COTTON YARDS & FREIGHT WAREHOUSES:

C&D. UP FREIGHT (1853) and DOWN (PRODUCE) FREIGHT (1859) WAREHOUSES:

These two structures extend from the rear of the Gray and Red Buildings and were one of the first structures to be completed in the passenger, freight, and office area north of the repair shops. They are simple, one-story brick structures, approximately 60 feet wide by 800 feet long, and 36 feet by 600 feet long respectively. The buildings are compartmentalized by fire walls, with wooden trusses supporting the roof and large, wooden double doors leading to the freight sidings between them.

E. COTTON YARD GATES (1856):

A long brick and wrought-iron wall facing West Broadway and broken by the Cotton Yard Gates and gate keepers' houses, connect the Red Building and Passenger Depot. Part of the original plan was to enclose the passenger, freight and cotton yards with a brick wall for protection and controlled access. The wall on West Broadway is all that remains.

F&G. MAIN LINE (1853) and DOOLEY YARD (1860) VIADUCTS:

The two viaducts span the Savannah and Ogeechee Canal and West Boundary Street (U.S. Route 17A). Both viaducts are constructed of Savannah Grey brick and consist of four arch spans. The Main Line Viaduct has three-centered arches of 35 foot span center to center of the piers and supported a double track on a deck 38 feet wide; total length of the viaduct is 200 feet. The viaduct exhibits decorative, semicircular arches in the parapet with a dentilated brick cornice and red sandstone capping. The piers are relieved by brick pilasters with semicircular arched openings in the spandrels that provide drainage.

The Dooley Yard Viaduct is composed of four shallow, segmental arches of 60 foot span center to center of the piers and also supported a double track on a 31 foot wide deck; total length of the structure is 241 feet. The viaduct exhibits high quality masonry work in the friezed cornice and parapet, the projecting brick course that follows the curve of the arches, and the brick rondels that relieve the mass of the spandrels. The arches rest on short piers enhanced by a pedimented motif.

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Design of the viaducts is attributed to Mueller and Schwaab, architects, and the masonry was done by Benjamin F. Armstrong. Both viaducts were in use for over one hundred years without strengthening, in spite of the fact that the locomotive tonnage increased over four hundred percent.

The Savannah and Ogeechee Canal should be mentioned since it does form part of the western boundary of the district and is an amenity itself. The canal is approximately 16-1/2 miles long and was built in the 1830s. It connected the two boundary rivers of Chatham County, providing a safe, short water route for canal boats hauling sea island cotton, rice, and lumber to the port of Savannah before the introduction of the railroad. It has been proposed that the canal be restored as a scenic recreational area and wildlife refuge.

MOTIVE POWER DEPARTMENT

The Motive Power Department was located on 12.9 acres across Railroad Avenue, south of the depot, administrative offices, freight and cotton yards. Its primary function was the maintenance and repair of rolling stock with some capacity to fabricate and repair right-of-way structures such as bridges. The Central of Georgia, like other early railroads, was nearly self sufficient during its first 25 years. The company built nearly all its locomotives and rolling stock until the 1870s when locomotive works, such as Baldwin of Philadelphia, and railroad car companies, such as Pullman of Chicago, were able to manufacture locomotives and cars more efficiently and sell them to the railroads at prices cheaper than if they made them themselves.

H. COMBINATION SMOKESTACK, WATER TANK & PRIVIES (1855):

The focus of the Central's shop complex was a 123 foot tall combination smokestack, water tank and privies. This unique structure exhausted the smoke through underground flues from all blacksmith, coppersmith, and boiler shop fires, as well as from the boiler of the stationary steam engine. Around the base are sixteen projecting buttresses forming cells between them with deep vaults which served as privies for the workmen. On top of the buttresses, a sixteen sided, 40,000 gallon water tank, made of decorative cast-iron panels cast by D&W Rose of Savannah, encircled the chimney shaft. Water pumped into the tank supplied the locomotive tenders and stationary steam engine boiler. The chimney also is polygonal, giving the appearance of a fluted circular column with a decorative brick capital and a massive cast-iron cap which has been removed.

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I. ENGINE (ROUND) HOUSE (1926):

The original engine house, completed in 1855, was 250 feet in diameter, had an open center with a turntable that serviced 40 locomotive stalls. In 1926, the old roundhouse was demolished when a new reinforced concrete roundhouse was built enclosing 21 stalls, 18 of which were extended 43 feet to accommodate increased locomotive sizes and a Whiting Electric Drop Table.

J. MACHINE SHOP (1855, 1878):

Adjoining the roundhouse is a 2-1/2 story rectangular building, 162'-7-1/2" long by 61'-10" wide, with gable roof and a raised ventilating monitor. This housed the machine shop where rough castings and forgings were machined and finished on the first floor before being assembled on the locomotive. The second floor, which was added in 1878, was used as the pattern shop and other light work. Originally suspended by wrought-iron rods from the heavy timber roof trusses to allow an unencumbered work area on the first floor, all of the second floor and the roof have been totally removed. Portions of the timber trusses have been retained, so that new trusses may be accurately reconstructed when the machine shop is restored.

K. BLACKSMITH SHOP (1855):

This one story building forms an "L" to the machine shop on its western side and measures 160'-5-1/2" long by 40'-8-3/4" wide. Its construction of brick bearing walls supporting heavy timber trusses with a ventilating roof monitor follows the same general form of the machine shop. Individual one main forge fires were located along the outside walls where wrought-iron and steel stock were heated and then swung by overhead, radial and traveling cranes to larger forging hammers placed in the center of the building. All the road ironwork as well as forgings for engines and cars was done in this shop. Along the wall facing Jones Street were a range of vaults under the street for storing iron, coal and other materials. Only the shell remains of the blacksmith shop, though there may be archeological evidence of the locations of the furnaces, foundry and forging hammers below grade.

L. ENGINE ROOM, BOILER HOUSE AND PATTERN ROOM (1854):

The crenelated parapet and the corbelled, arcaded cornice closely resembles the architectural features on the 1853 Main Line Viaduct. The engine room, 40 feet by 20 feet, housed a single column beam engine, built by A. N. Miller of

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Savannah, that powered all the drive shafts in the original shops. The boiler was a locomotive type housed in a room 40 feet by 13 feet. To the rear was a pattern room, about 35 by 20 feet. The boiler and steam engine, after providing 52 years of reliable service, was replaced in 1907, when a new steam-powered electric generating plant was installed in the engine room.

The group of buildings composing the engine room, boiler house, pattern room, lumber storage shed and carpentry shop are separated by an alley between the blacksmith and machine shops. The former group completed the square of buildings that partially enclosed an open courtyard in which was centered the smokestack. This separation represents a difference in function of the two groups of buildings - one being essentially metal working and the other wood working. The separation also served as a fire break.

M. LUMBER STORAGE SHED (1855):

This one-story, masonry and timber building is integrated with the carpentry shop and had three large arched openings leading to an open shed, under which was situated a large Daniel's planing machine for dressing sills and caps for cars and other similar work. The Daniel's planer no longer survives and the lumber shed was converted into a compressor and generator room in 1907.

N. CARPENTRY SHOP (1853, 1923):

Possibly the first shop to be completed in the motive power yard, it is also the last of the original 1850 shop buildings to be described. It originally functioned as a car shop containing all machinery and equipment for building, repairing and painting passenger cars and other types of rolling stock.

In 1923, a fire destroyed most of the carpentry shop. Firemen were able to save the north end of the building which contained the planing mill, but the paint shop, coach and cabinet shop, plumbing and upholstery shop were destroyed. Work began immediately to rebuild the shop, making use of the masonry bearing walls and those trusses which did not burn. Arched windows which provided light and ventilation to the basement, which permitted the machine drive shafts to be located beneath the floor, were bricked in. In 1925, a new storehouse was erected adjacent to the planing mill.

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O. PAINT AND COACH SHOP (1923, 1924, 1925):

This early 20th century building is the last structure in the motive power yard and forms the southwest corner of the site. Because it is the newest building in the district, its exterior frustration is very utilitarian in design, typical of early 20th century industrial architecture. The paint and coach shop is lit by large industrial, metal framed windows and a sawtooth skylight in the roof.

To the north of this building was located a horizontal transfer table, probably installed the same year the paint and coach shops were constructed. It extended eastward to handle cars being worked on in the carpentry shop as well. Immediately north of the transfer table was a large lumber yard. The pit for the table was filled in 1965.

These constitute the physical structures that survive from the Central of Georgia's former Savannah terminal facilities. The city of Savannah has spent or appropriated \$260,000 for the stabilization, protection, and initial restoration on the buildings. The city now is in the process of exploring adaptive reuse plans that would result in the restoration of the shop complex. Total cost of site development and building restoration is estimated at a little over \$2 million.

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY-PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION
<input type="checkbox"/> 1400-1499	<input checked="" type="checkbox"/> ARCHEOLOGY-HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input type="checkbox"/> SCIENCE
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE
<input type="checkbox"/> 1600-1699	<input checked="" type="checkbox"/> ARCHITECTURE	<input type="checkbox"/> EDUCATION	<input type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> ART	<input checked="" type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input type="checkbox"/> THEATER
<input checked="" type="checkbox"/> 1800-1899	<input type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION/SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input checked="" type="checkbox"/> TRANSPORTATION
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> COMMUNICATIONS	<input checked="" type="checkbox"/> INDUSTRY	<input type="checkbox"/> POLITICS/GOVERNMENT	<input type="checkbox"/> OTHER (SPECIFY)
		<input type="checkbox"/> INVENTION		

SPECIFIC DATES 1853-1926

BUILDER/ARCHITECT William M. Wadley, Superintendent
and President; Augustus Schwaab
and Martin P. Mueller, architects

STATEMENT OF SIGNIFICANCE

The Central Railroad and Banking Company of Georgia, renamed the Central of Georgia Railroad Company in 1895, built a large shops complex in Savannah, the corporate headquarters of the company and the eastern terminus of the line. The original complex was constructed during the 1850s and 1860s, based on the plans of William M. Wadley, superintendent of the railroad, and following the War Between the States, president of the company.

Today, the shop buildings of the motive power department, the passenger station and trainshed, freight warehouses and depot, and the administrative and engineering offices comprise the oldest surviving and best example of a mid-19th century, integrated railroad shops complex in the United States. This distinction is based on comparison with similar facilities built by other railroads that were contemporaneous with the Central of Georgia, such as the Baltimore and Ohio, the New York and Erie, and the South Carolina and Canal. All three of these systems have been studied by the Historic American Engineering Record and only the latter retains any of its physical plant dating from the 1850-1860 period. However, the South Carolina railroad shops in Charleston, though they are as old as Savannah's, technically cannot be classified the same. They are not representative of a comprehensively planned industrial facility that became standard railroad practice following the Civil War. The famous Susquehanna Shops of the New York and Erie in Susquehanna, Pennsylvania, and the Mt. Clare Shops of the B&O in Baltimore, were similar in scale to the Central's Savannah Shops, but both complexes dated from the period following the Civil War, during which time most of America's railroads undertook massive rebuilding programs to accommodate the expansion of the lines westward and the consequent demand for increased freight and passenger car repair facilities. If the historical time frame for the evaluation of the Central of Georgia's Savannah Shops were to be expanded to include the post-Civil War period, these two complexes could not be considered because they were totally destroyed in 1975 and 1976 respectively. Shop complexes for railroads not mentioned have suffered a similar fate or the dates of their surviving buildings are two to three decades younger than those of the Central of Georgia. Thus, the Savannah complex is of extreme rarity and of paramount importance to 19th century railroad history.

This does not mean that the Central of Georgia did not improve its physical plant. The complex escaped destruction by Sherman's forces at the end of the Civil War and throughout the remaining decades of the 19th and early 20th centuries,

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adaptations to existing structures, new construction and the changeover from steam to electricity as the primary mode of power, reflected the growth and improvement of the Central of Georgia system. The fact that most of the earlier buildings survived and were integrated with later improvements bears testimony to the universality and timelessness of Wadley's precedent setting concept. The early shop complexes of other railroads were not as well planned as the Central of Georgia's. Their demolition in favor of new construction indicate that they could not accommodate the increased size and maintenance requirements of locomotives and other forms of rolling stock, or the ever changing functional requirements of the maintenance of the structures that composed the right-of-way.

Therefore, the only conclusion one can arrive at concerning the Central of Georgia Savannah Shops is concurrence with Colburn's assessment of 1855 in which he states in an article that appeared in the New York Railroad Advocate:

We have few great railroad stations in the whole country, such as combined complete accommodations for great transportation and mechanical departments. One or two at Boston, those at Detroit, Pittsburg(sic), and Baltimore are probably among the largest. Of these, only the Pittsburg station is new, and laid out in modern style. Here, even the engine and transportation houses are at some distance apart, and do not form one complete and continuous station.

We have many large and elegant depot buildings, and quite as many great and excellent repair shops, but we are now speaking particularly of a great and complete station, for the accommodation of a freight and passenger business, and for the construction and repair of the entire machinery of a great road.

To say that Savannah, Georgia, is likely to have the most complete and elegant railroad in the country (beside it also being one of the largest), may be a matter of some surprise to northern and western railroad men. But looking, even with northern eyes, upon the station of the Georgia Central road, we believe its superior capacity, convenience, and elegance must be admitted.

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Since none of the shop complexes mentioned in the article survive, this makes the Central of Georgia's Savannah Shops not only one of the oldest railroad facilities in the country, but also a precedent example of comprehensive industrial planning that became standard railroad practice in the last quarter of the 19th century, not to mention the architectural quality as exhibited in the structural detailing and brick fenestration of the various shop buildings and the unique combination smokestack-water tank-privy.

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SAVANNAH REPAIR SHOPS...
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- 3) Reiter, Beth Lattimore, Architectural Data Relating to the Central of Georgia Shops Complex, a report prepared as part of the Central of Georgia RR: Savannah Shops Survey conducted by the Historic American Engineering Record, Summer 1975.
- 4) Schmitt, John Bartley, The Central of Georgia Shops Complex, a report prepared as part of the Central of Georgia RR: Savannah Shops Survey conducted by the Historic American Engineering Record, Summer 1975.
- 5) Voluminous primary and secondary sources were researched as part of the HAER study and are listed in the bibliographies of Grinde's, Reiter's, and Schmitt's reports.

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SAVANNAH REPAIR SHOPS

HAER No. GA-1

(Page 133)

- 1) HANSEN ARCHITECTS/LAND PLANNERS, PHASE I DEVELOPMENT: Savannah Revolutionary Battlefield Park, prepared for the City of Savannah, November 1977.
- 2) Grinde, Donald A., Ph.D., Building the Central of Georgia Railroad, a report prepared for the Historic American Engineering Record, August 1974.

(continued)

GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY 33.2 Acres

UTM REFERENCES

A	<input type="text"/>	<input type="text"/>	<input type="text"/>
	ZONE	EASTING	NORTHING

B	<input type="text"/>	<input type="text"/>	<input type="text"/>
	ZONE	EASTING	NORTHING

VERBAL BOUNDARY DESCRIPTION

A tract of land bounded by New Street to the north, West Broad and Purse Street to the east, Jones Street to the south, and West Boundary Street to the west.

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

FORM PREPARED BY

NAME / TITLE

Eric N. DeLony, Principal Architect

ORGANIZATION

Historic American Engineering Record

STREET & NUMBER

Heritage Conservation and Recreation Service

CITY OR TOWN

Washington, D. C.

DATE

February 15, 1978

TELEPHONE

(202) 523-5460

STATE

STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:

NATIONAL ____

STATE ____

LOCAL ____

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

STATE HISTORIC PRESERVATION OFFICER SIGNATURE

TITLE

DATE

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DATE

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION
ATTEST:

DATE

KEEPER OF THE NATIONAL REGISTER

ADDENDUM TO:
CENTRAL OF GEORGIA RAILWAY, SAVANNAH REPAIR SHOPS
& TERMINAL FACILITIES
Bounded by West Broad, Jones, West Boundary & Hull Streets
Savannah
Chatham County
Georgia

HAER GA-1
GA,26-SAV,55-

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001